

The MILLING WORLD

and CHRONICLE

OF THE GRAIN and FLOUR TRADE.

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THE EXCELSIOR MILLING CO., LOUISIANA, MO.

ITS NEW ROLLER FLOUR MILL.

AT the west end of the bridge over the Mississippi river at Louisiana, Mo., the Excelsior Milling Company have recently erected a very substantial four-story building, to accommodate the necessary machinery for turning out two hundred barrels of flour per twenty-four hours, by the full roller process, and the contract for the entire outfit of machinery, and the fitting up of the establishment, was awarded to the Nordyke & Marmon Co., of Indianapolis, Ind.

The foundation of the building is roughly dressed stone, and the walls, seventeen inches thick, of hard pressed brick. The girders, joist, posts, and under side of floors are dressed and nicely painted, and brick walls whitewashed. The engine room is in two compartments, one of which contains a battery of boilers with handsome fire-front and steam fixtures; the other, an automatic engine of seventy-five horse power. The coal is received direct from cars into coal bins adjoining boilers.

The first floor contains eighteen pairs of rolls, six pair of which reduce the wheat to middlings, while the remainder are for reducing the middlings to flour, and finishing up tailings.

The cleaning machinery is full and complete, consisting of separator, scourer, smutter and brush finisher. There are seven large purifiers, which clean the middlings, while the bolting is done on ten scalpers, twelve flouring reels, two centrifugals, and one grader for middlings. There are also seven dust collectors, two bran dusters, and two flour packers, which, together with the twenty-four elevators and necessary shafting, pulleys, belting, and gearing, completes the list of machinery.

The total cost of this mill approximates \$35,000, including building. The machinery is arranged in a novel and simple manner, which admits of large passage-ways between each individual machine.

The owners are business men of large experience and wide observation, and were therefore, presumably good judges of machinery, and the fact that the contract was awarded to the Nordyke & Marmon Co., evidences their high appreciation of the facilities possessed by that company for executing contracts of this nature. We are authorized to state that all parties interested, or those proposing the erection of a similar mill, are cordially invited to inspect this establishment, as each visitor will receive most courteous and polite attention.

A TRADE MARK DECISION.

A decision of considerable importance to the milling fraternity was rendered by Judge Wallace, of the U. S. Circuit Court, for the Southern District of New York, on May 6, the text of which has just reached us, and is below appended in full. We are not familiar with the particulars of the case, but the decision was rendered in the suit of the

Atlantic Milling Co., instituted against one, Robinson, to restrain him from the employment of the word Champion, as designating a particular quality of flour, the said word Champion having been arbitrarily selected, and for many years employed by the Atlantic Milling Co., to designate a particular grade of flour made by said company, and for which it had succeeded in building up a large and remunerative demand. The opinion reads as follows:

"The proofs show that in 1861 the firm of Alex. H. Smith & Co., then the proprietors of the Atlantic Mills, at St. Louis, Mo., adopted the word 'Champion,' and employed it to distinguish a particular quality of flour made and sold by them. From that time until the present it has been used as a trade-mark either by that firm or the several firms and corporations that became the proprietors of the property and business of the Atlantic

mill, which it has been appropriated to designate as the production or article of the proprietor. It may be abandoned if the business of the proprietor is abandoned. It may become identified with the place or establishment where the article is manufactured or sold to which it has been applied, so as to designate and characterize the article as the production of that place or establishment rather than of the proprietor. A trade mark of this description is of no value to the original proprietor, because he could not use it without deception, and therefore would not be protected in its exclusive enjoyment. Such a trade mark would seem to be an incident to the business of the place or establishment to which it owes its origin, and without which it can have no independent existence. It should be deemed to pass with a transfer of the business, because such an implication is consistent with the charac-

supported by any extrinsic evidence, and is not deemed sufficiently reliable to defeat the complainant's right. Upon the accounting to ascertain damages the fact is not to be overlooked that in the instances in which the trade mark has been used by the defendant in connection with the names of other manufacturers than the complainant's, the complainant's damages are measured by the extent to which the unlawful use of the word 'Champion' has interfered with the sale of their flour. Their right to an injunction is not affected because the appropriation of their trade mark has been a limited one, and it is not incumbent on them to show that it has been copied in every particular. It is sufficient if his trade mark has been copied to an extent calculated to mislead purchasers, and cause the article to which it has been applied to pass as their article. A decree is ordered for the complainant."

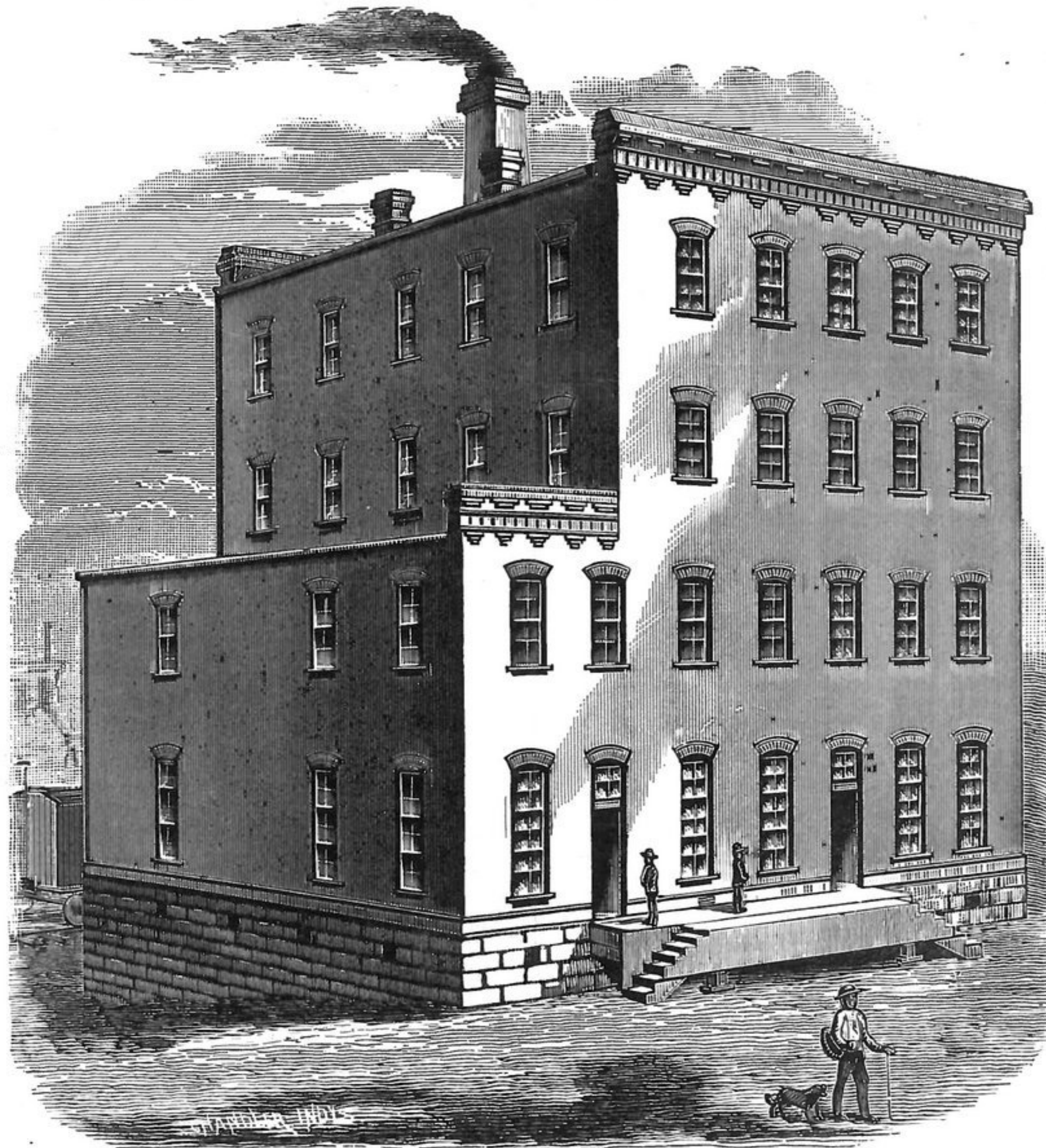
VARIETIES OF WHEAT.

II.

The number of "grades" of wheat differs according to local conditions. In some places, as for instance in San Francisco, where only winter wheat is in the market, and most of the sales are in specific lots, there may be but three, or at most four, grades officially recognized; but in Eastern markets were both winter and spring wheats, with red and white wheats of each, are sold, there are more, it may be but six or eight, or there may be a dozen "grades" besides the "ungraded." Local rules vary, but year by year the methods of commerce bring the different places into more and more uniformity of practice. There is a considerable difference in the weight of wheat per bushel, the actual weights ranging from 54 or 55 pounds, to 64 or 65 pounds, but the weight everywhere recognized as a bushel, in this country, is sixty pounds, both by law and by custom. When the wheat falls below 57 pounds, the quality is decidedly inferior, and when above 61 pounds it is considered exceptionally good. It is in only rare cases that it rises to above 63 pounds. The bushel in common use in the United States is the Winchester bushel, containing 2,150 $\frac{4}{10}$ cubic inches. The imperial bushel of the United Kingdom contains 2,218 $\frac{1}{10}$ cubic inches; therefore wheat weighing sixty pounds per Winchester bushel weighs 61 $\frac{8}{10}$ pounds per imperial bushel. This is the reason why the weight of English

wheat, as given in ordinary works and reports, appears so much greater than American.

Analyses of whole winter wheats show that there is a considerable difference of composition between the different varieties, and between specimens in the same variety. The so-called strength of wheat, that upon which the lightness of bread depends, is related to what is called the gluten; and in fifty-seven different samples of wheat analysed, this varied from 8.4 to 14.5 per cent. The amount varies in the same variety of wheats, sometimes as much as 3 per cent. The average of all the analyses of winter wheat and spring wheats, show that the latter average about 1.3 per cent. more albuminoids than the winter wheats, and this is why, with modern milling processes, they make the stronger flour. The range



THE EXCELSIOR MILLS, LOUISIANA, MO.

Mills. The flour to which it was applied was particularly adapted for the southern export trade, and became generally known and recognized as the production of the Atlantic Mills by the word which was thus used to designate it. The complainant has not made proof of any formal transfer by Alex. H. Smith & Co. to any of the succeeding proprietors of the Atlantic Mills of the right to use the trade-mark, and if complainant has acquired that right it is because it passed upon the purchase of the mill property and business as an accessory thereof to each purchaser who became the proprietor of the premises, including the complainant, without any agreement respecting the trade-mark.

"The right to the exclusive use of a word or symbol as a trade mark is inseparable from the right to make and sell the com-

modity of the transaction and the presumable intention of the parties.

"The defendant controverts the right of the complainant to the exclusive use of the word 'Champion' as a trade mark by the testimony of two witnesses to the effect that they use it or saw it used as a brand upon flour before it was adopted by Alex. H. Smith & Co. The testimony of the witness Potter fails to show the use of the word in the instances to which he refers prior to 1867, and is therefore valueless. The witness Reamey testifies that he used it for branding the flour of nine different firms as long ago as 1857. None of the persons for whom it was so used have been produced, although many of them were accessible. If Reamey's statement is correct, it could have been readily corroborated. The failure to do so is significant. His statement is not

is also greater than among winter wheats, the poorer spring wheats having but 8.1, and the best 15.5 per cent. albuminoids. The chemical composition of the grain, and its value as a bread plant, not only vary greatly in the different varieties, but also in the same variety from year to year and on different soils, and also vary with the effects of manures.

The size and plumpness, and consequently the average weight of wheat kernels vary much between the different varieties and with the same variety in different years. The following table gives the result of very careful calculations; in number 1 and 2 the grains are very long; in 9, 10 and 11, round and plump. None of them are badly shrunken, and several of the samples were analyzed:

Variety.	State.	Grains per lb.	Grains per bus.
1 Macaroni wheat	California	7,443	446,580
2 " "	"	8,822	529,320
3 Australian winter wheat (very plump)	Oregon	9,450	567,000
4 Little club (very plump)	"	10,188	611,280
5 White Australian spring	"	11,244	674,640
6 White Sonora spring	"	11,330	679,800
7 White wheat	"	12,236	734,160
8 Amber bearded spring	Maine	13,743	824,580
9 Red winter, No. 2	"	14,227	853,620
10 Milwaukee clubs	"	15,165	909,900
11 Red winter	New York	16,199	971,940

Many years ago, Davy found the wheat of Sicily richer in gluten than that of England; and this appears to have led to a hasty generalization, that the wheat of warm climates was stronger than that of cooler ones. It has been claimed that the wheat of Northern Africa was stronger, that it contained more gluten than that of Northern Europe. So far as the analyses of American wheats show, this is not proved to be the case. Undoubtedly, climate as well as soil affects the amount of albuminoids, but we have no evidence that the California wheats are, as a class, richer than those of other regions, or the wheats of the Southern States richer than those of the Northern.

There are differences naturally existing in the composition of wheat flour, similar to the differences existing in the grain. Of forty-nine analyses of flour, the average amount of albuminoids is somewhat less than the average amount in all the wheats, but there is a similarly large range, some sinking as low as 8.6, and others running as high as 13.6, the starch and the albuminoids standing in opposite relations to each other. The flours rich in gluten are what are technically called "strong" flours, while those rich in starch do not easily make so light a bread, but are more especially "pastry flours."

Under the modern system of milling, the amount of flour made from a given amount of wheat is not only greater, but the number of kinds or brands of flour, has also greatly increased, each with its special characteristics and special properties.

A large number of tables of the chemical composition of the wheat grain and the wheat flour, show why wheat bread is, on the whole, the most nutritious of breads, is that it is richer in albuminoids. The special excellence of wheat bread however, is largely due to the fact that the gluten itself has other properties than the albuminoids found in other cereals, which make it more digestible and susceptible of making lighter bread. An oatmeal having a nutritive value equal to wheat flour, will not make a light bread. The albuminoids of the different cereals are similar in chemical composition, but unlike in their properties, and those found in wheat, the gluten have an especial character, known as paniferous qualities, in a much greater degree than the albuminoids of any other grain.

Wheat contains less oil than corn, and this is probably one reason why wheat flour is more easily preserved than cornmeal. In the grain of wheat, there is more oil in the germ than in the body of the grain, and modern methods of milling, which remove

the germ because it discolors the flour and bread made from it, deprive it of a slightly larger proportion of oil than did the old-fashioned methods. In the analyses the average amount of oil in five "straight" flours was 1.38 per cent., while in eight "patent" flours it was 1.24 per cent.

As a general rule the bran is thinner on upland wheat than on lowland, and on white wheat than on red. Its thickness also depends somewhat on the time of cutting. There is a popular belief among millers that most of the oil contained in wheat is found in the germ, and that by a removal of the germ the oil is removed. The analyses of flours, however, do not bear out this supposition. The average quantity of oil in the flour is somewhat less than in the whole grain, but the amount is, nevertheless, quite notable. The claim of the greatly superior character of Graham flour, because of its being richer in albuminoids, is not born out by analyses. The average of the few gluten flour examined, was a little higher than the average of all the other flours in gluten; but it must be remembered that this flour is generally made from wheat of a quality that is rich in albuminoids, while for special purposes many of the whiter flours are poor in them, and their analyses bring down the general average in the total flour analyses.

HOW TO DETERMINE THE AD-MIXTURE OF ORGANIC OR IN-ORGANIC SUBSTANCES IN RYE AND WHEAT FLOUR.

(Prize essay of the German Millers' Association, by Dr. L. Wittmack, Professor at the Agricultural College at Berlin.)

Translated by THE MILLING WORLD.

III.

THE EMBRYO OR GERM.

The germ or embryo is formed of an ascending part with the main bud, called *plumula*, and a few side buds; and a descending part, the rootlets or *radicula*. This latter is formed of a main root and several side roots. A cross section through the embryo reveals in the descending part, three rootlets in the wheat, four in the rye, and from five to seven in barley and oats. It is well known that the embryo in its lower part is in direct contact with the endosperm, or seed albumen, near the external covering of the grain kernel. The embryo is provided with a special organ for the absorption of the starchy as well as the nitrogenous substances for its nourishment. This organ is the so-called shield, *scutellum*, a shield-shaped part which brings the embryo in contact with the starch kernel. That side of the shield nearest to the starch is lined with vertical, pillar-shaped, delicate tubular cells, by means of which the embryo absorbs the soluble dextrin and sugar. These cells are known as the "suction cells." The rest of the embryo is made up in its principal portions of cells with very delicate walls in regular rows, filled with protoplasm (nitrogenous matter) and fat. As the embryo is generally removed before the reduction process takes place, we find but rarely small portions of these embryo cells in the flour. The largest part of the flour is formed by the starch grains, the next in quantity are the gluten granules of about the same size as the small starch grains; then we find the thick-walled cells of the gluten layer; the thin-walled starch cells, parts of the epidermis and hairs, or at least, fragments of the latter.

THE ANATOMY OF THE OTHER CEREALS.

As we shall refer to this later on, we will simply mention the following:

1. Barley is built up almost like rye and wheat, but its epidermis is much thinner and covered with many hairs. The gluten layer is formed of three rows of cells, while all the other cereals have one. This can be demonstrated only on a cross section.

2. Oats have no circular cell layer in the epidermis, and its starch grains are formed of 1, large spherical or ellipsoidal-shaped, 2, composite, and 3, very small granules of which latter, from two to four, adhere to each other; these are of a roundish form. The gluten layer is often formed of two rows of cells.

3. Rice has the circular cell layer in the epidermis, which is very thin. The starch grains are of a composite nature, resembling those of oats; if separated, the individual granules are a little larger than those of oats.

4. Corn has in its epidermis only a longitudinal cell layer, neither circular nor pigment layer is present. Here we find the coloring matter in the most interior longitudinal cells, excepting in the blue and blue black varieties, where the color is held in the gluten cells. The starch grains are single, almost as large as those of barley, but their form differs in having five or six obtuse corners, and large star-shaped fissures in their interior.

This concludes the theoretical portion of the work, and we now turn to the *practical part*.

I.—TEST FOR INORGANIC SUBSTANCES.

Although adulterations of flour with mineral substances in larger or smaller quantities are exceedingly rare, it may be useful to know the best tests for their detection, as a few years ago such substances were in the market of Holland under the name of "artificial flour." The simplest test for this purpose was discovered by Mr. Cailletet, of Charleville, in 1858, by means of chloroform. To four or five grams of flour we add about 60 cubic centimeters of chloroform in a test tube; shake well, and after a little while all the flour is found floating on the top of the liquid, while the mineral substances are precipitated. In this simple manner we are able to determine one part of adulteration in 10,000 parts of flour.

Chloroform has a higher specific gravity than flour, but less than mineral substances. For instance, the specific gravity of chloroform is 1.527; wheat, 1.413; limestone, 2.570; chalk, 2.230; heavy spar, 4.480; sulphate of lime, 2.230; plaster paris, 1.810; marble dust, 2.720; bone dust, 1.650. Besides this chloroform has the advantage of not dissolving any of these substances.

It is not necessary to use such large quantities for a test. As much flour has can be held on the point of a table knife, a small quantity of the chloroform and a test tube 13 to 14 cm. long, and 1 to 1½ cm. in diameter, are all the apparatuses needed. The sample of flour is placed into the glass, which is then filled half or three quarters full of chloroform and thoroughly shaken. After a little while the mineral adulteration can be seen in the bottom of the tube. In pure flour we may find a very minute precipitate of gray brownish granules, composed of the dust of the burrs. A white precipitate is always a sign of adulteration. If the sample tested proves our suspicions, it is best to make an additional test with pure flour to determine the difference. If the doubtful sample was weighed before and after testing, we can determine accurately how large a percentage of mineral substance is contained in the flour. The Cailletet chloroform test has been improved by Hager, who adds a small quantity of muriatic acid after all the flour has floated to the top of the test tube. This addition transforms the starch into a pasty mass, which can be removed with ease.

Prof. Himly tells us that the chloroform test has been used even in cases of poison. He once applied it successfully, to determine whether arsenic in its pure form had been added to the flour or in other compounds. Pure arsenic in powder, being a mineral, would naturally sink to the bottom when the flour was tested with chloroform.

If there is no chloroform available, pure water will do almost as well. Take an extra large test tube, plenty of water, and very little flour, shake well and observe immediately whether a precipitate is formed. To obtain additional certainty, add one or two drops of iodine to the contents of the tube, this will color all the starch blue, but not alter the appearance of the minerals. An adulteration of two per cent. of plaster paris, heavy spar or chalk, can be detected in this way, and smaller percentages we will hardly meet as fraudulent admixtures. Another substance which can be used in place of chloroform, is a saturated solution of chemically pure potash, which has about the same specific gravity. Fifty parts of potash and fifty parts of boiling water, or according to the quantity of water contained in the potash, sixty parts of the latter to forty parts of water, form, after cooling and filtering, a solution which can be used in the same way as the chloroform.

A saturated solution of chloride of zinc in water has also a specific gravity like the chloroform. Chloride of zinc causes the starch to swell and form a paste which gives a very clear solution.

As the handling of chloroform by inexperienced people is considered dangerous, a forty-five per cent. solution of bromide of potassium of specific gravity of 1.43, is highly recommended by Mr. Van den Wyngaert. This solution has the additional advantage of forming immediately a precipitate of any mineral substances that the flour may contain. There are many other methods for the detection of mineral substances, but none are as simple as the above.

A simple test for the detection of carbonate of lime or carbonate of magnesium, consists, according to Prof. Birnbaum, in making a thin paste of the suspected flour and alcohol. An addition of a few drops of diluted muriatic acid, will then reveal the presence of the carbonates by an effervescence. Water, always containing certain quantities of carbonic acid, cannot be used for the paste in this test.

According to the same authority, plaster paris, heavy spar, quartz and clay can be detected when a small quantity of the flour is added to 10 ccm. absolute sulphuric acid in a test tube and slowly heated. The flour is almost entirely dissolved in the acid, but the mineral matter is precipitated.

The object in all these tests is to dissolve the starch; whether this is done by sulphuric, muriatic, or other strong acids, or by alkalies, such as caustic potash, is immaterial.

Lime can be detected in flour by its alkaline reaction, *i. e.* it colors moist red litmus paper (to be obtained at any drug store) blue when pressed into the flour.

The safest test for mineral substances in flour, is the analysis of the ashes. This, however, can be made only by a chemist in a well equipped laboratory; it is not advisable to attempt it in any ordinary way, although a quantitative test can be made, at least, approximately, by heating a small quantity of flour on a piece of platinum foil over an alcohol lamp or a bunsen gas burner. Pure flour produces but a very small quantity of ashes, while the adulterated article gives more. If plaster paris is present, it can be detected around the margin of the ashes in a white substance, and the whole ashes becomes white sooner than the ashes of pure flour.

SOWING TARES.

The plant known as tare, says a writer in the *Globe Democrat*, is a sort of weed called durad, which very closely resembles wheat in the early stages of growth, but loses its resemblance long before maturity. When both are ripe, there is no difficulty in distinguishing the difference between them, and the separation is made, either by

winnowing or by laboriously picking out the tare seeds one by one, a work usually performed by the women and children. The tares can not be allowed to remain among the wheat since they mar the quality of the flour, and if found in any quantity will cause nausea, giddiness, and severe sickness. While growing they are never pulled up from the wheat, unless in too great a quantity, for fear that at the same time, the wheat may also be rooted up, but both are allowed to grow together till the harvest, when it is an easy matter to distinguish between them. Dr. Roberts says that sowing the durad in a neighbor's field, is, at the present day, by no means an unusual thing. The villain who meditates revenge for some real or fancied wrong, watches his neighbor at work until the latter has finished the sowing of his field, and then, at night, goes and scatters the seed of this noxious weed. It springs up with the wheat, and, as it is impossible to detect the difference before the maturity or nearly at the maturity of both, and the weed kills out the wheat, the owner of the field reaps nothing for his pains. There is, however, a plant more obnoxious still than the durad. It is the Perum Pirandum, which is said to be more destructive to vegetation of all kinds, than any other plant known in the East. It also closely resembles the wheat, but after it has sprung up there is hardly a possibility of exterminating it, save by a desperate struggle lasting several years, so that a man, after his enemy has sowed tares of this description in his field, will often sell the ground at once for whatever it will bring, and move elsewhere, rather than undertake the suppression of the weed. In the light of this explanation, and with the knowledge of the noxious properties of the tare, it is not wonderful that the parable should have been so forcible to those who heard it.

THE MILL OF TO-DAY.

Probably no line of industrial pursuit requires so large pecuniary investment and turns out a product so high in value, with so small a force of human labor as flour milling. Under favorable conditions a mill capable of turning out two hundred barrels of flour in twenty-four hours, by the full roller process, may be erected for a sum not varying greatly from \$35,000, and such a mill, advantageously located, may be operated continuously by a force of eighteen men, few of whom need be specially skilled in the departments of their allotted labor. Under skillful and competent guidance, comparatively poor men may be made to perform excellent service in a flour mill. Satisfactory and profitable results depend so largely upon the machinery employed that flour manufacture may almost be classed as being strictly among the mechanical arts.

Is this assertion disputed? Let us look at it for a moment. Passing over the operations of wheat separation and cleaning, as for our purpose these are non-essential, the first step in the process of flour manufacture is the initial break or reduction. This is performed by a machine, and the coarseness or fineness of this break or reduction is regulated by mechanical means, usually a screw which determines the nearness of approach of the surfaces of the rolls by which the reduction is to be effected. What is true of the first break rolls is true of those which follow them. The regulation of the nearness of approach of the roll surfaces we term their adjustment; a mechanical term. Taking the first break rolls, they will, or may be, run for a practically indefinite time, and the product from their operation will not perceptibly vary, so long as the wheat upon which they operate remains the same in size and quality. By a

proper adjustment we may rely upon uniformity in their product.

Turning now to the scalping reels. If they are of mechanically perfect construction, revolve at the proper speed, have the proper inclination, and are properly clothed, we may confidently rely upon continually similar results. The same is true of the purifier. If the speed of fan is correct, the angle, clothing and vibration of sieves as they should be, and the flow of material, in proper condition for handling, is regular and of proper quantity, then its correct operation may be relied upon, for an indefinite period, barring natural wear of the machine or parts thereof. And so with all the machinery of the entire establishment.

The entire process of flour manufacture is mechanical. Oliver Evans to convince the people of the perfection of his establishment provided an ample supply of wheat, started the mill and left it to run itself while he went into his fields to work. What he did a century ago may be done today, but adjustments are more delicate, more easily disarranged owing to the greater amount of complexity by reason of the multiplication of machinery, and it is quite possible that something would happen to disarrange the organism of the establishment were the attempt to emulate Oliver Evans' exhibition made.

The presiding genius and responsible head of a flour mill has a pretty big load to carry if the mill of which he has charge is successful. Not only must he be competent to understandingly give his orders, but he must know that those orders are carried out strictly and fully. In a well regulated establishment he alone is censured for any inferiority of product or any change in quality of output. While it is no doubt gratifying to be known as the head miller of a successful mill, it is not always pleasant to hold such a position. But this is not what we were intending to refer to.

The flour mill of to-day is simply a vast and complicated piece of mechanism, admirably arranged in all its component parts, and each of such parts is directly dependent for proper action upon those which precede and follow it. As with other complicated and delicate mechanism men of little or no skill may be relied upon to properly look after the operation of some of its details, but above and over all must be a responsible head. He must be so entirely conversant with every detail of the equipment of the mill as to be at all times familiar with the results which will follow any change, howsoever slight, in any single part of the machinery which forms the equipment of the establishment, and he must also be familiar with every quality and grade of the raw material which he may at any time be called upon to convert into flour. We can admire the skill genius and knowledge possessed by the superintendent of a large factory employing its hundreds of mechanics, but do not forget that such a man has always exact quantities and figures to work from and by, while the successful head miller, provided as he may be with the most perfect of mechanical appliances, has a raw material to handle which constantly, although perhaps slightly, varies in character or quality, and which is also subject to the influences of the weather or season. To be successful as the superintendent of some large mechanical industrial establishment necessitates the possession of a well informed mind, a practical training in that particular line of industry, and more than ordinary executive ability, but is less than this demanded of the successful miller?

In the North-Western Provinces and Oudh, the Indian agriculturist, as elsewhere, is ignorant of threshing otherwise than by setting a bullock or two to tread out the grain.



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Do not order your cloth until you have conferred with us. It will pay you, both in point of quality and price. We are prepared with special facilities for this work. Write us before you order.

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Give size and speed of shaft you wish to connect to. Address,

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Or any leading Mill Furnisher.

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Nine full set of the celebrated Stevens rolls, made by the John T. Noye Mfg. Co., Buffalo, N. Y. Six of them were sent to the Commercial Mills, Detroit, Mich., in December last, but were taken from there without having been put in operation, or having been touched by fire, and our rolls substituted. They were made from the present patterns of the John T. Noye Mfg. Co., and have their late so-called Holt belt drive (or words to that effect). We will furnish smooth rolls with these machines, or any kind of corrugations, to parties who may object to the Stevens corrugations. Three set we have recently taken from the celebrated Elkhorn Mills, of H. D. Rush & Co., Leavenworth, Kan., where our rolls are being placed. All of these rolls were made at Ansonia, Conn., and are of the same make as those used by the John T. Noye Mfg. Co. We offer these rolls at half list price. Please write for particulars. Respectfully,

NORDYKE & MARMON CO.,
Indianapolis, Ind.

SITUATIONS WANTED.

Advertisements under this head, 25 cents each insertion for 25 words, and 1/4 cents for each additional word. Cash with order. Three consecutive insertions will be given for the price of two.

SITUATION WANTED.

In a custom grist or flouring mill by a man who has had about two and one-half years' experience as a miller, and can furnish best of references. Address, T. H. NICHOLAS, Forestville, Chautauqua County, N. Y. 8tf

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Advertisements of Mills for Sale or Rent, Partners Wanted, Machines for Sale or Exchange, etc., cost 1/4 cents per word for one insertion, or 4 cents per word for four insertions. No order taken for less than 50 cents for one insertion, or \$1 for four insertions. Cash must accompany the order. When replies are ordered sent care of this office, 10 cents must be added to pay postage.

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For a term of years. Having seven run of stone and machinery for flouring. Is very conveniently located in the City of Lockport, N. Y., on the Erie Canal. Operated by a Leffel turbine. Buildings of stone, slate roofs, ample storage capacity and good water power. Wheat taken directly into the mill from boats, also from teams. Prospects for a large crop of wheat good. Two railroads can take flour in any direction. This is the time to get ready for grinding the new crop. Terms liberal. Apply to L. A. SPALDING, Lockport, N. Y. 812

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A never-failing water-power flouring and grist mill can be bought at a sacrifice. Unavoidable circumstances forces this property in market. Brick building 44x48. Good investment. For particulars address, C. C. CHAPMAN, Smithfield, Isle of Wight county, Va. 710

STEAM FLOURING MILL FOR SALE OR TO LET.

New buildings and new modern milling machinery. Patent rollers for making new process flour. Also two run of stone for rye flour and feed, all in complete working order. Large local trade. Situated on line of railroad. Inquire of FIRST NATIONAL BANK, Fishkill Landing, N. Y. 811

FOR SALE CHEAP.

One 6-horse power engine and 10-horse power boiler, all complete, price, \$350; one 8-horse power engine and 10-horse power boiler, price, \$375; one 10-horse power portable complete, price, \$350; one 10-horse power Russell Traction, price, \$500; one 4-horse power vertical engine, price, \$120. Call or address for particulars EZRA F. LANDIS, Lancaster, Pa. 262

YOU CAN BUY THESE CHEAP.

1400 4x3 elevator cups. } made by W. P. Myer,
1300 4x3x3/4 " } of Indianapolis, Ind.
Three McCully Corn Cob Crushers.
Each of the above articles is brand new, in perfect condition, just as they left the factories, never having been unboxed, and will be sold very cheap for cash. Address S., 30 care THE MILLING WORLD, Buffalo, N. Y. tf

INDIANA MILL PROPERTY AT A BARGAIN.

We have for sale a 125-barrel mill, with fifty acres of land, at Hagerstown, Ind. This mill has recently been remodeled at a cost of \$14,000. Fine wheat section. Good home market. Also low freight rates to Cincinnati and Baltimore. Property cost \$25,000; will be sold for half that amount, on easy terms, to parties who have money to run the business. For further particulars address SINKER, DAVIS & CO., Mill Builders and Furnishers, Indianapolis, Ind. 1013

MILL FOR SALE CHEAP.

Situated in the town of East Bloomfield, Ontario Co., N. Y. Mill has 3 run stone and all machinery for doing first class custom and merchant work. There is eight acres of land. Good house, barn and plenty of fruit. The mill is driven by spring stream that never fails. Situated 3/4 mill from depot. Reasons for selling ill health. Those wishing to buy mill property would do well to see this. BURRELL BROS., East Bloomfield, N. Y. 811

FOR SALE.

Water mill at Whitehall, Trempealeau county, Wis. Mill built in 1878. Five run of stone. Mill easily converted into roller mill. Plenty of water all seasons. Good custom trade. Can command trade of Wisconsin Piney. Home demand for all. Wheat supply from first hands. Mill forty rods from Depot. Side track to mill can be procured. Whitehall is a thriving town and county seat. Good reasons for selling. Address, WHITEHALL MILL CO., Whitehall, Wis. 7tf

MILL FOR SALE.

I want to sell one-half interest in the "Brick City Mills" and water power. Mill building is of brick, 40x80 feet in size, and six stories high. Fitted out complete with seven sets of rolls and four pairs of burrs. Thoroughly repaired last August at a cost of between \$4,000 and \$5,000. Turkey river is here 200 feet wide, with rock bottom and sides, making one of the cheapest powers to maintain in the state. The power is double the amount ever used. Price for half interest is \$11,000. Address J. G. BOTSFORD, Clermont, Iowa. 913

BEST OPENING IN THE UNITED STATES.

We have recently remodeled a hominy mill with flour machinery, at Omaha, Neb. Omaha has 50,000 people, and is without a flouring mill. Kansas and Minnesota flour sells wholesale at \$3.50 per hundred weight. Northern Nebraska winter wheat can be had in quantities in Omaha at 75 and 80 cents per bushel. We will sell the property at a bargain, on easy terms, to parties who have money to operate. For further particulars address SINKER, DAVIS & CO., Mill Builders and Furnishers, Indianapolis, Ind. 1013

SALE OF MILL PROPERTY.

The undersigned will on the 19th day of July, 1884, sell at public sale on the premises, a valuable custom water mill, situated at Perkinsville, Madison County, Indiana, about twelve miles west of Anderson and twelve miles east of Noblesville. Good pike leading to each place. There is now in the mill three-run of burrs. Water power is sufficient to run mill with capacity of 100 barrels in twenty-four hours. Mill is frame and four stories high, situated in excellent wheat and corn country and doing good business. Cause for selling, owner is dead. For particulars, address the undersigned, at Perkinsville, Madison County, Indiana. GEORGE V. ZELLER, Administrator. 911

VALUABLE MILL PROPERTY.

Roxbury Mill, on Antietam River, for Rent or for Sale on easy terms. This property comprises a most desirable flouring mill in complete order with three run of burrs, excellent and never-failing water power, 23 acres rich land, good two-story dwelling house, situated one mile northeast of Breathedsville, on Washington County railroad, and five miles southeast of Hagerstown, and on the road leading from the Hagerstown and Sharpsburg pike to the Hagerstown and Boonsboro pike, in as fine and healthy agricultural district as can be found. A full supply of wheat can always be had by wagons, direct from farmers in the neighborhood. The mill has always had local custom for all the mill feed and much of the flour made. For terms, &c., apply to GEO. T. GAMBRILL & CO., Baltimore, Md., or F. F. McCOMBS, Attorney, Hagerstown, Md. 614

"GRAND VALLEY MILLS" FOR SALE.

At Triplett, Mo. Mill building is 28x30 feet and four stories high. Built by G. & W. Todd & Co., of St. Louis, Mo. It has one pair of 3 1/2-foot stones for wheat; one pair 30-inch, for corn; a two-reel chest, 24 feet long; a No. 4 Martin's centrifugal reel; a No. 1 Smith purifier; a Eureka smutter, and a corn sheller. All new and in good running order. Engine room, 18x28 feet. Engine and boiler built by the Erie City Iron Works. Engine, 12x20; boiler, 38 inches by 12 feet, tubular; all new and in good order. Located in the town of Triplett, Mo., 75 feet from Wabash railroad track. Town contains about 700 inhabitants. Mill has a good local trade established, and in a good wheat-raising district. Abundance of water, and feed plenty and cheap. All the facilities for doing a No. 1 business. Satisfactory reasons given for selling. A good opening for a practical miller for doing a good business. For terms and price address MADDOCK & SHIPP, Triplett, Mo. 912



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BUFFALO, N. Y.

Mr. THOMAS McFAUL is the authorized agent and traveling correspondent for this paper.

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Card of Rates sent promptly on application. Orders for new advertisements should reach this office on Tuesday morning, to insure insertion in the week's issue. Changes for current advertisements should be sent so as to reach this office Saturdays.

EDITOR'S ANNOUNCEMENT.

Correspondence is invited from millers and millwrights on any subject pertaining to any branch of milling or the grain and flour trade.

Correspondents must give their full name and address, not necessarily for publication, but as a guarantee of good faith.

This paper has no connection with any manufacturing or mill furnishing business. Its editorial opinions cannot and will not be influenced by a bestowal or refusal of patronage. It has nothing for sale, but its space to advertisers and itself to subscribers.

Entered at the Post Office, at Buffalo, N. Y., as mail matter of second-class.

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PRESENT AND FUTURE.

BUSINESS in very nearly every line of industrial pursuit is, plainly speaking, dull. Several causes have operated to produce this effect, causes which are well understood, and which, from all present indications, will be, in the near future, removed. While THE MILLING WORLD has no affiliation with either political party, it cannot close its eyes to the fact that a part of the present business depression is directly traceable to our tariff system; not perhaps because such a system is in vogue, but because its existence gives opportunity for "tinkering" with it, thus unsettling, in a greater or lesser measure, conditions under which the country's business or commercial affairs are carried on. We do not wish to be understood as either advocating or condemning our tariff system, but simply as alleging that in its present uncertain form it may be, in the hands of professional politicians, used for personal advancement at the expense of legitimate industry. It is probably undeniable that many of the measures proposed in Congress, the passage or adoption of which would affect our business interests, are proposed, primarily, to obtain an expression of popular sentiment relative to the good or injury to be derived from their adoption. The necessity for such action is by no means apparent, yet it serves, in a measure, to keep the name of the congressman before the minds of his constituents, and, in a greater or lesser degree, impresses them with the fact that his brilliant intellect is constantly on the alert to better the condition of his suffering or expectant countrymen. Nothing, perhaps, affords the average congressman so wide a field for the display of his total lack of knowledge of political economy, as this question of revenue or tariff reform, and it is this well-recognized ignorance that creates alarm in business circles whenever such reform becomes the topic

of discussion in our congressional halls, and this alarm reflects itself in the material reduction of output from our factories, in the anxiety manifested to close up outstanding accounts, in a much closer scrutiny of credits, and a spontaneous effort to reduce stocks of merchandise by a practical slaughter of values.

* * *

It has virtually passed into an accepted truism that the years of our Presidential elections are depressing in their effects upon business. It has been urged that longer Presidential tenure of office would result to the material advantage and benefit of our commercial interests, because it would render less frequent possible changes in Governmental policy. We need not in this connection discuss that question, it is sufficient to know that this is a Presidential year, and one of more than ordinary interest. It is an undisputed fact that the nominee of the Republican party has not the united and cordial support of that political party. The Democratic party has not yet named its candidate, but will undoubtedly fix upon some man who is popular with the masses, and in such event the struggle for supremacy will be warm and vigorous, with at least a possibility of success for the latter party. Should there be a change in the party dominant, what will be its effect upon our business interests? Admitting the possibility of success by the Democratic party, it is not surprising that the business man should hesitate about expanding present operations, or undertaking new ventures; in fact, the success of the Republican party may, under the leadership of Mr. Blaine, signify a decided change in the policy of our government, and this uncertainty makes conservatism, in all enterprises, a present necessary virtue.

* * *

It is freely admitted that the productive interests of this country have been too rapidly expanded; that is, we have produced, or manufactured, in excess of the consumptive powers of the markets to which we have access. Undoubtedly our protective tariff system has operated in certain markets to our disadvantage, but it can hardly be true, as charged in some quarters, that this protective tariff is the prime cause of the present stagnation in general business in this country, because, little, if any, better business conditions exist in foreign lands where protective tariffs are practically unknown. We must look beyond our tariff system, although it has been a potent factor, for the real cause of the present business lassitude. Attempt as we may to disguise the fact, it is, nevertheless, true that confidence in the immediate future is a lacking element in business circles, nor can this be regarded as in any measure remarkable. Confidence has been outrageously abused, and must have assurance that the "bottom" has been reached before it will again enter the arena of speculative strife. It is loudly asserted that the bottom has been reached, but facts do not bear out such assertions. The daily record of failures and suspensions stamps such assertions as fabrications; our dull and profitless wheat and flour markets plainly evidence that the utterers of such assertions lie—under erroneous impressions; lifeless stock and other speculative markets are but the reflex of unprofitable mercantile and legitimate pursuits, further emphasized by the cutting down, and in many cases total suspension, of dividends by railway and other corporations. In brief, such is the business situation at this time.

* * *

We confidently anticipate a change in the near future, in legitimate business and speculative circles. We do not think the "bottom" has yet been reached, but we are very near it, and when it is touched there will be experienced a rebound, not rapid or high, but,

still, sufficient to indicate that elasticity is not completely deadened. The season is now so far advanced that we are practically assured of an abundant wheat crop; not perhaps any larger than that of last year, but almost certainly, of better quality. The very material curtailment in productive industry, which the past six months have witnessed, will, ere long, result in an increased output to make good the deficiency which consumption will have created. The rapid getting down to reasonable and just bases of value, which is now going on in investment securities, will, ere long, be entirely accomplished, and public confidence having been once more attracted to them, they will, perhaps slowly, nevertheless surely, be again sought after. It is easy to shake the public confidence, but a few plucky spirits acting in concert and harmony can, after it has been for some little time withdrawn from its accustomed haunts, lure it back, and by judicious management carry it to the verge of recklessness. This has frequently been done, and it can, and will, be done again. The present dullness in business has been of gradual development. Failures of great magnitude have occurred, and, no doubt, before we "turn the corner" we shall hear of others of perhaps as large proportions, but, so long a time has been had for preparation that anything in the nature of a panic would seem to be impossible. Conservatism may, and no doubt will, for some time govern the commercial world, but the time is not very far distant when we shall again enter upon a season of high prosperity.

THE American Association for the Advancement of Science, feeling the necessity for a closer relationship between science and arts, formed three years ago a "Mechanical Section." At the following annual meetings at Montreal and Minneapolis in 1882 and 1883, this section was fairly represented, considering its youth, and embodied among its members many of the leading engineers and professors from our different technical institutes. The officers of this section are making special efforts to have their meeting at Philadelphia as important a gathering as can be held by either of the now leading scientific sections, such as geology, chemistry, biology, etc., and for this purpose circulars are issued to all manufacturers and engineers who take an interest in their profession, asking for co-operation. Additional interest is felt in this year's meeting from the fact that the British Association for the Advancement of Science will be the guest of the American scientists. The opening of the Electrical Exhibition at the same time will form another attraction, especially now where the applications of electricity are so manifold and important. "The Mechanical section" says the circulars referred to above, "the sessions of which you are invited to attend, is especially devoted to the advancement of all the sciences most directly applicable in the arts, and in the departments of engineering. It is hoped and fully expected that the several great technical societies of the country will take an active part in the promotion of the plan." Members, actual as well as prospective, who desire to read papers at this meeting, can procure blanks from the secretary, Prof. J. B. Webb, Cornell University, Ithaca, N. Y., on which an abstract of the paper must be written and returned. If models or apparatus are to be exhibited, a corresponding statement must be sent to the secretary as early as possible. As is to be expected, only papers of real merit will be accepted, and anything in the form of a mere advertisement will be carefully rejected. We consider it our duty to inform the readers of THE MILLING WORLD of this important gathering of the leading men in the world of thought in America and England, with the hope that our patrons will be well represented among

the members of the "Mechanical Sections of the American Association for the advancement of Science."

THE New York Commercial Bulletin charges the present and recent breaks in the Erie and Champlain canals as directly traceable to the fact that these waterways, having been by popular vote made "free," are no longer given proper attention. We were under the impression that the State had in its service specially appointed men whose duty it is to keep these artificial waterways in navigable condition. If they neglect to properly perform their duty the remedy of discharge from office is always available, and were it vigorously employed we should have few complaints from boatmen, receivers or shippers. It is not because these canals are "free" that breaks and other disasters interfere with transportation, but because the men appointed to care for the canals achieve their positions by reason of their availability about election times. The "striker" is essential to both political parties, "pap" is his favorite diet, and it is seldom given to any but men of "influence."

It seems strange that we still have discussions on the question whether wheat can turn into "cheat" by intelligent journals. While any form of vegetation can degenerate, owing to conditions not always visible, one form never turns into a distinct other form on so short a notice, and "cheat" is well known to botanists as a member of the grass family, rejoicing in the technical name of *Bromus secalinus*. If a field of wheat turns partially into cheat, it simply demonstrates that the seeds of the latter were present in the soil, carried there either in the seed grain, or by some other agencies; pure wheat will never produce anything else than its kind, improved or degenerated according to existing conditions, but always wheat, never "cheat."

OF all paternal governments found among civilized nations, Germany seems to take the lead. The latest bill passed by the Reichstag is to foster the power of trade unions, and hinder full and open competition. It decrees that all tradesmen exercising any one of the trades which have unions, who refuse to enter the union of their respective trades, shall be prohibited from employing apprentices. This kind of legislation may not be quite up to the standard of the free American's idea of law making, but there can be no doubt that it answers admirably for Germany, whose political leaders are more intelligent than the majority of the constituents whom they represent, and who seem to understand the art of catering to the taste of the masses.

FOR the eleven months ended May 31 last, the value of our exports exceeded that of our imports by \$71,561,046. For the same period ending May 31, 1883, our exports exceeded our imports by \$111,099,099, or a balance in our favor of something more than \$39,000,000 in excess of the present year. We are inclined to charge a considerable portion of this difference to speculation which forced our surplus of wheat up to a price at which foreign buyers felt unwilling to make purchases. Speculation is a poor basis for permanent prosperity.

SEVERAL of our contemporaries are prophecying a strong and well sustained bull movement in wheat between this and September. All present indications point to the harvesting of a very large crop, and one of exceptionally fine quality, but for all that it is difficult just now to see wherein any ground exists for anticipating high prices for wheat. On the contrary it would seem to us more reasonable to expect low prices.

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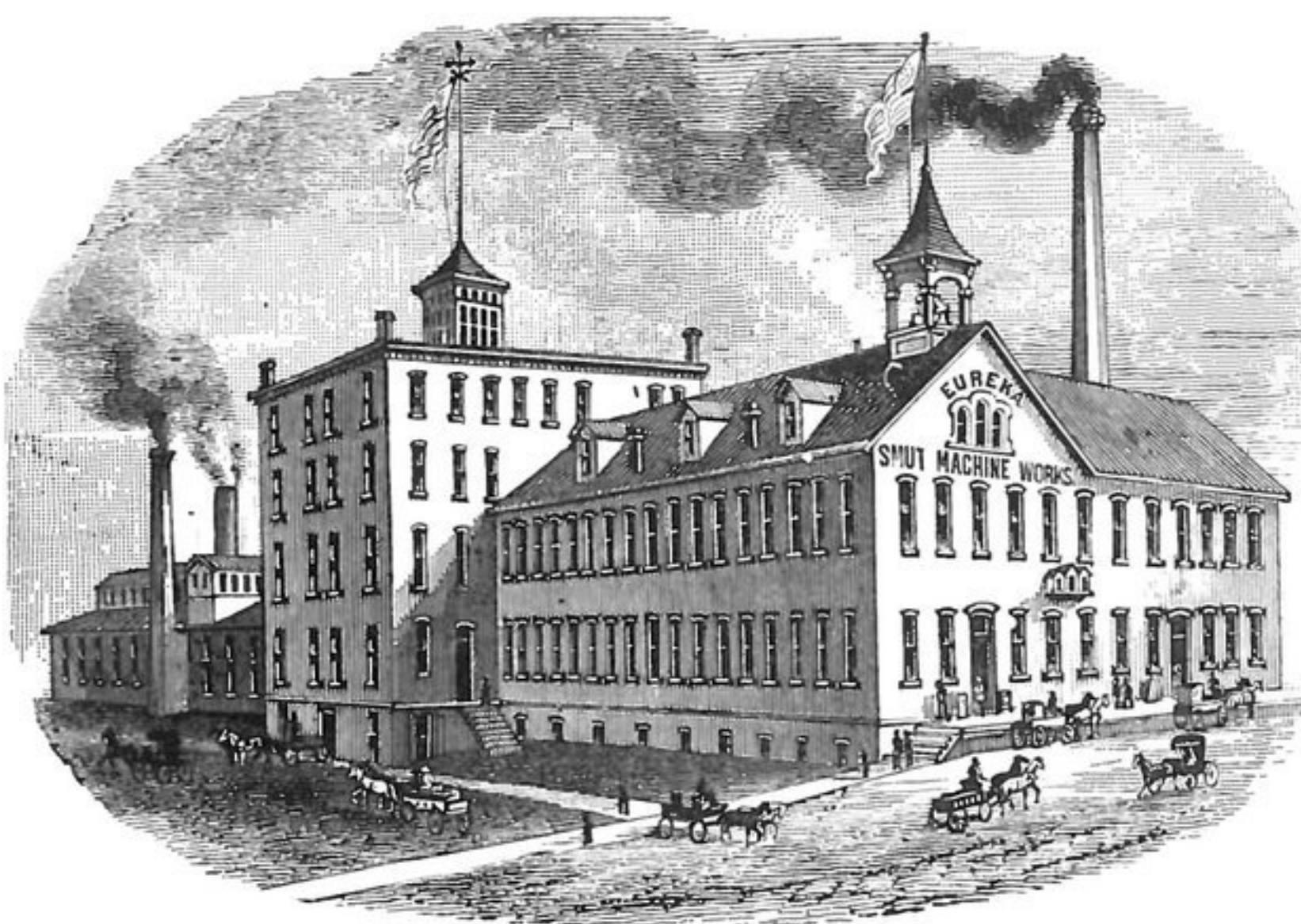
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THE IMPROVED MORSE ELEVATOR BOLT

THE KNICKERBOCKER CO.

MILWAUKEE, Wis., March 20, 1884.

Gents: Your Bolt is working well and beats anything in the way of a Bolt, centrifugal or any other, that has yet been invented. As a general thing we do not like to certify to a thing on so short a notice, but your machine is an exception. We will experiment as we have opportunity and see how many more machines we can profitably use. Wishing you all success, we remain,

Your truly,

E. SANDERSON & CO.

THE KNICKERBOCKER CO.

JANESVILLE, Wis., April 9, 1884.

Gents: I am fully satisfied with your Morse Elevator Bolt, it is a wonderful machine, and is as far ahead of the old Bolting Chest of Reels as the roller process is ahead of stone milling. Enclosed find draft for the No. 1 sent me, please forward the two No. 1 Bolts bought of your agent, one is for bolting patent stock, and the other low grade stock.

Yours Truly,

C. W. HODSON.

THE KNICKERBOCKER CO.

CLEVELAND, OHIO, April 3, 1884.

Dear Sirs: Regarding the Morse Bolt we cannot say enough in its praise. We have three different makes of Centrifugal Reels in our mill, and having given the Morse Bolt a fair trial alongside of them we can certify as to their merits. We have demonstrated the Morse Bolt will handle double the quantity the Centrifugal will and produce a better flour and cleaner finish. In fact any material in the mill can be handled with more economy and better results than upon any system we know of. The Morse Bolt being under the complete control of the operator is a point in its favor that cannot be over-estimated, and we believe when its merits are more widely known it will supercede the present mode of bolting.

Yours respectfully,

M. C. DOW & CO.

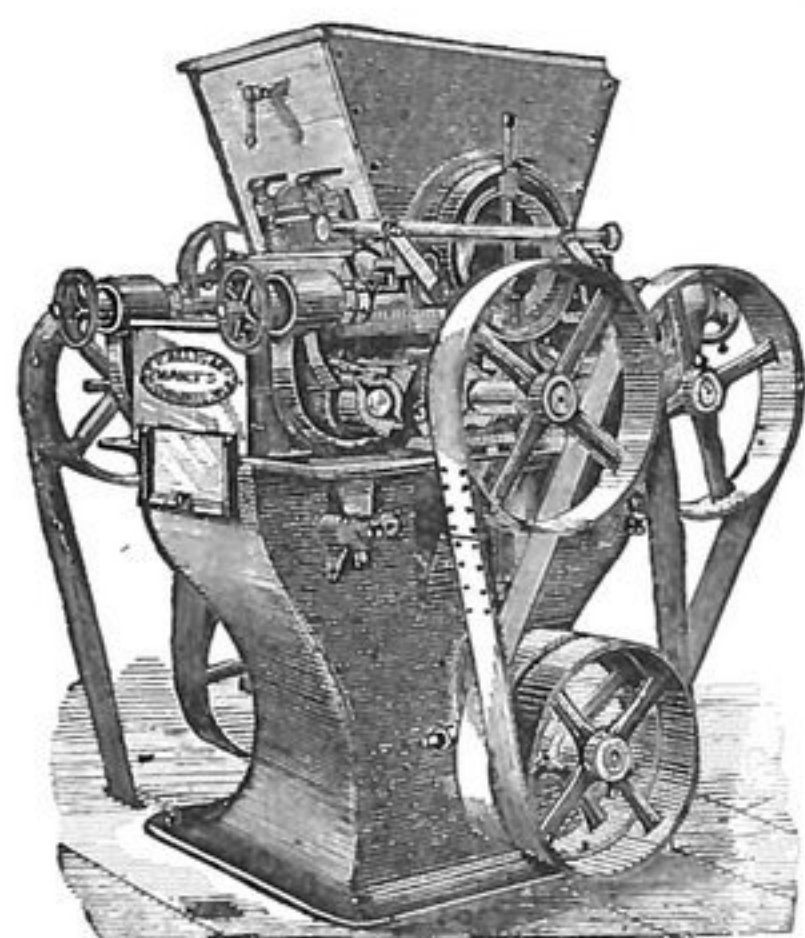
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Send for Catalogue. Cohoes, N. Y.

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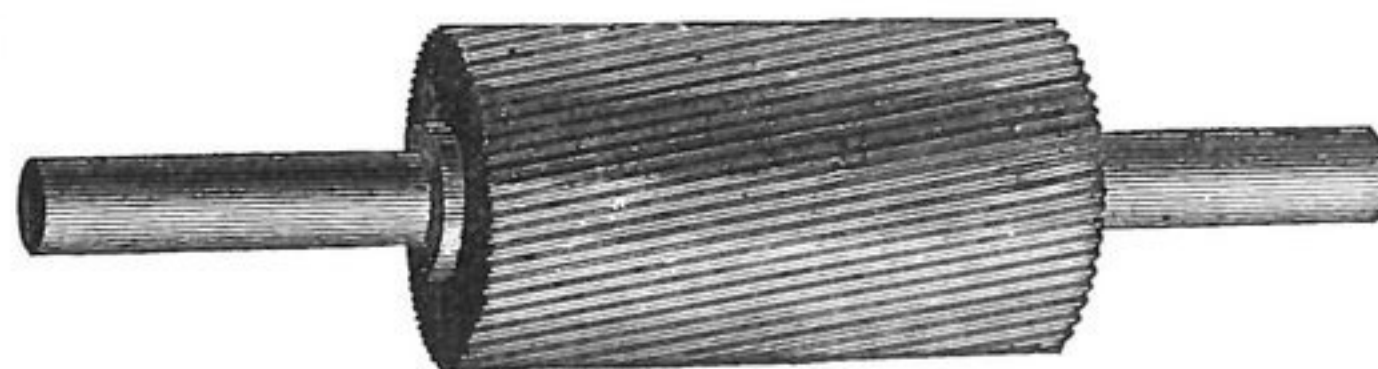
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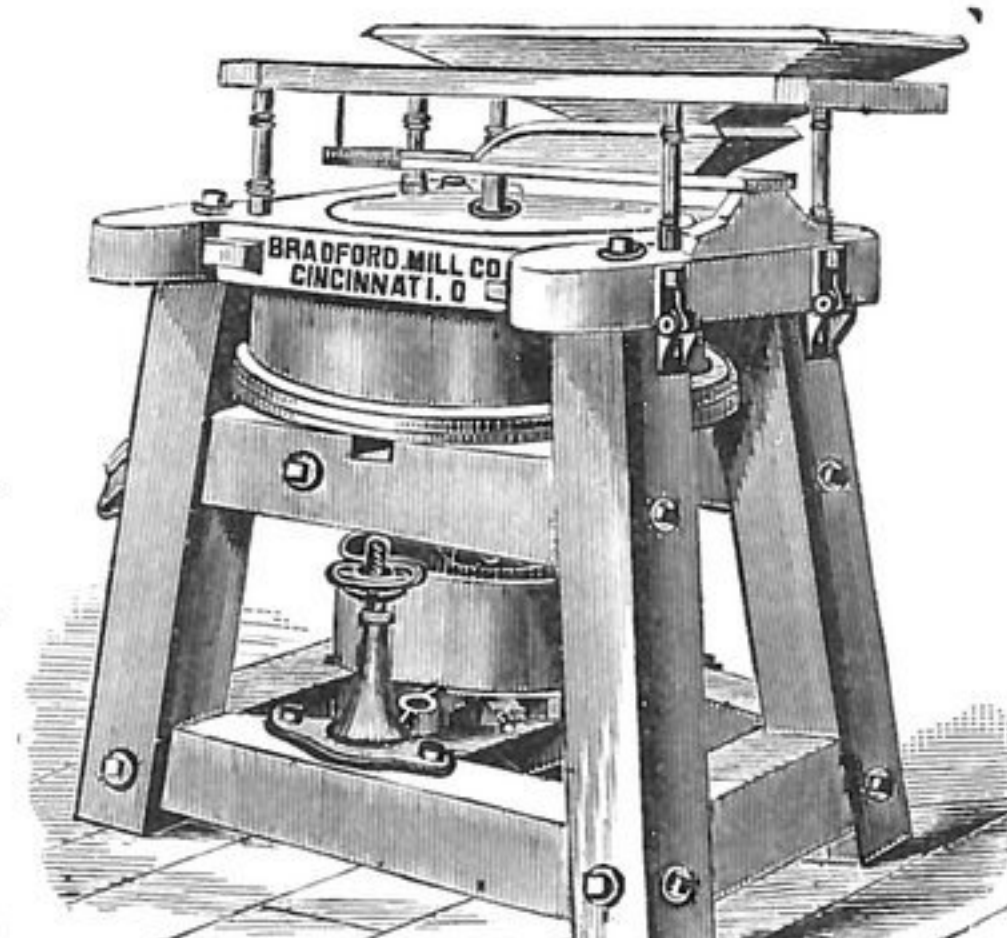
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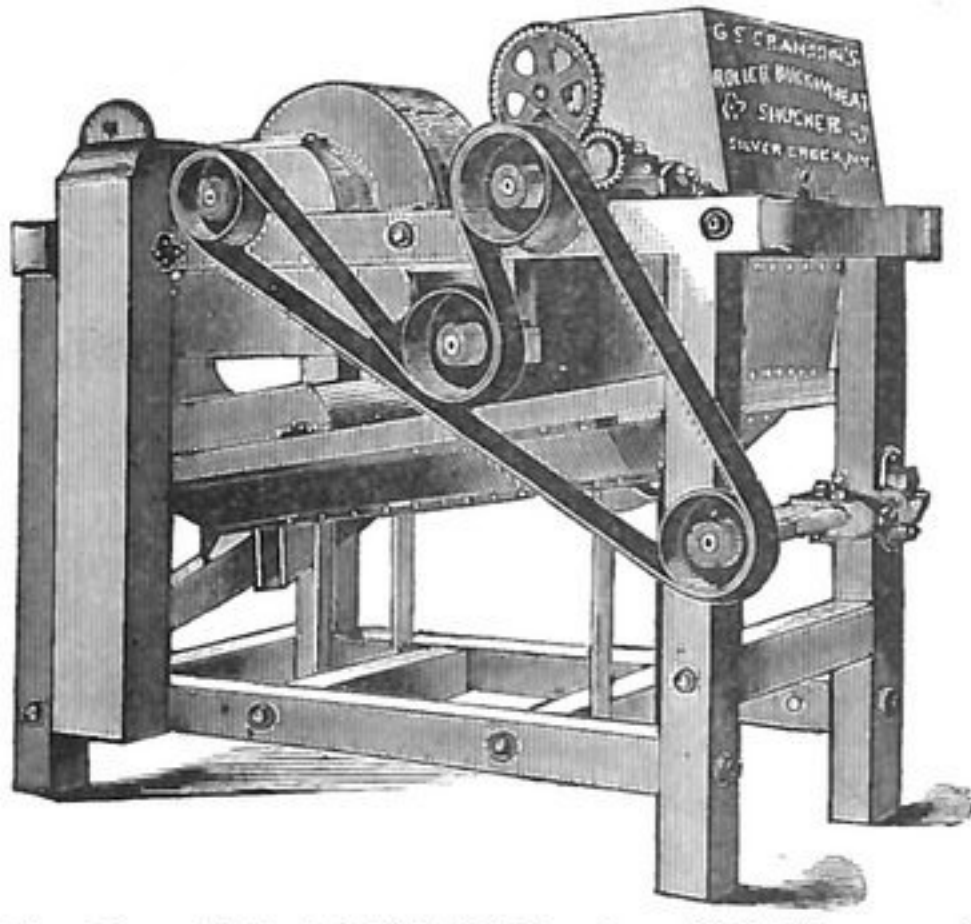
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ROLLS
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Re-Ground and
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ADVANTAGE TO INVESTIGATE THE
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ITS SUCCESS IS BEYOND QUESTION.
ITS VALUE HAS BEEN DEMONSTRAT-
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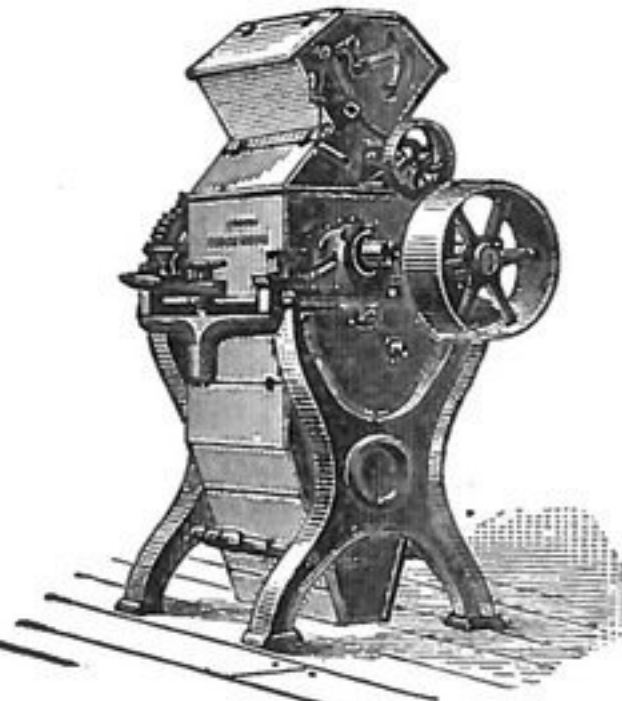
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SIZES OF ROLLS 9x18 and 7x14 INCHES.

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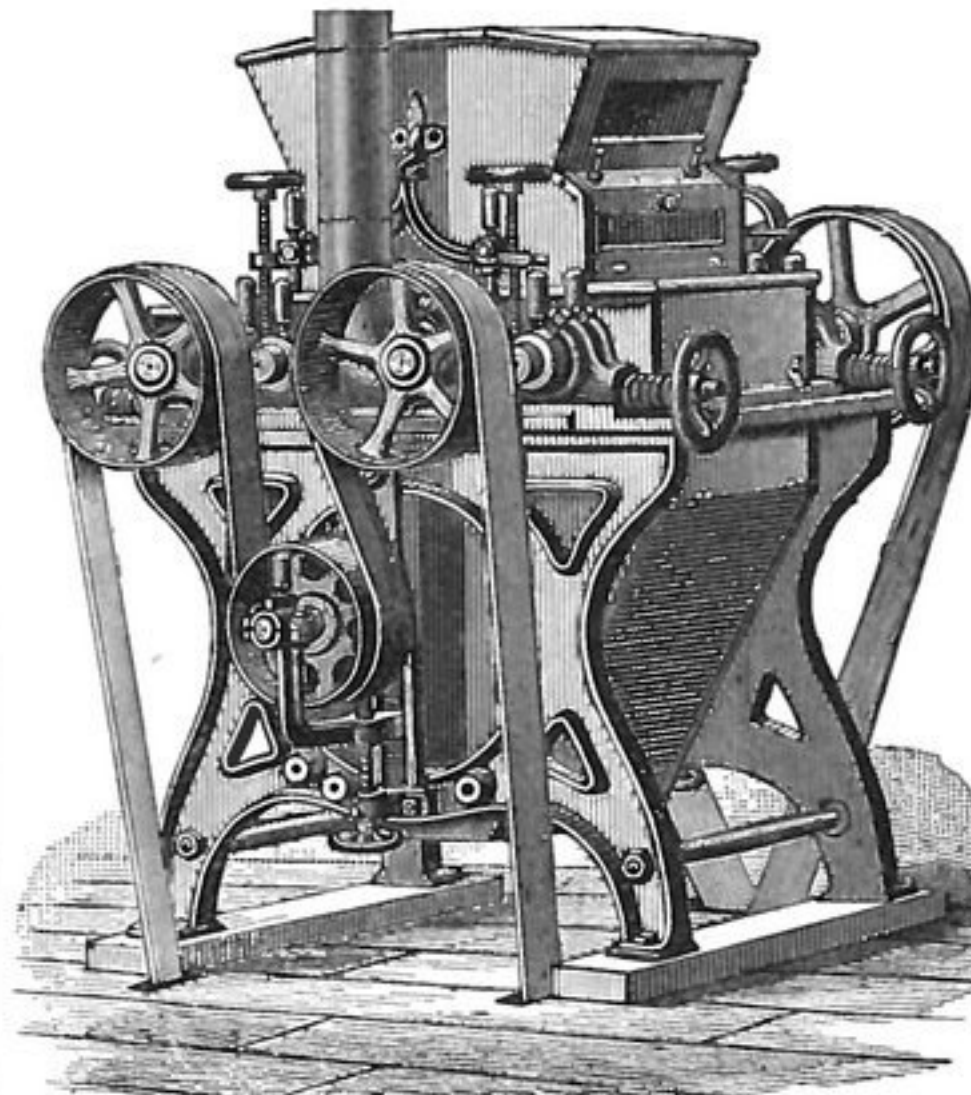


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THE BEST ROLL IN THE MARKET

RICKERSON'S

PATENT IMPROVED ROLLER MILL.



Our six by twenty rolls weigh 175 pounds each making 700 pounds to drive in a double set roller mill, as against 1800 pounds in the old style mill; this fact enables us to run with greater speed, with no danger of hot journals, hence our greater capacity. Produces better results, because there is less Pulverizing and Better GRANULATION, the point of contact being much less on a SIX-INCH ROLL than the old system; the STOCK BEING KEPT LARGER and more middlings produced on each reduction. It is a well established fact that the object in gradual reduction milling is to make as large a percentage of middlings as possible, and we claim to make MORE MIDDINGS from a bushel of wheat THAN ANY OTHER ROLLER MILL, and we are prepared to prove our claim. The MORE MIDDINGS the greater percentage of PATENT FLOUR, and better COLOR of ALL grades. We build the only Roller Mill with PATENT EXHAUST ATTACHMENT for taking away all GENERATED HEAT, thus doing away with the GREATEST ANNOYANCE that millers have experienced in running the gradual reduction system, at the same time keeping the stock cooler as it passes

to the Reels and Purifiers, consequently the separations are made more easily. We use nothing but the Ansonia Chilled Iron Roll, with steel journals, ground, and run them entirely with LONG belts. With a feed device for throwing out and in easily, with a leveling device that is positive and perfect, and an adjustment so entirely positive, that feed can be stopped or cut-off, and put on again without readjusting rollers. **WE DO NOT DEPEND UPON THE STOCK TO KEEP OUR ROLLS APART.** We are prepared to furnish plans for our Gradual Reduction system on short notice, and fill orders for our Mills promptly. We make both Corrugated and Smooth Rolls, Twelve, Fifteen, Eighteen and Twenty Inches Long and Six Inches in Diameter. Prices Sent on Application. Correspondence solicited. Address,

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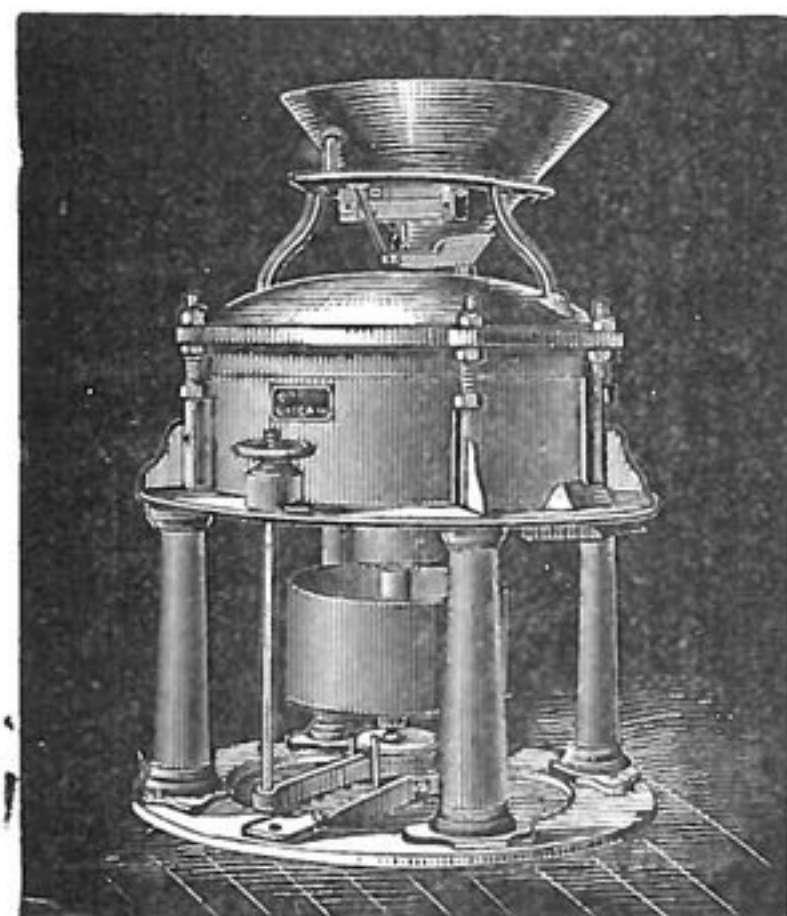
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their bolting uniform and run up to their full capacity during the hot weather by using
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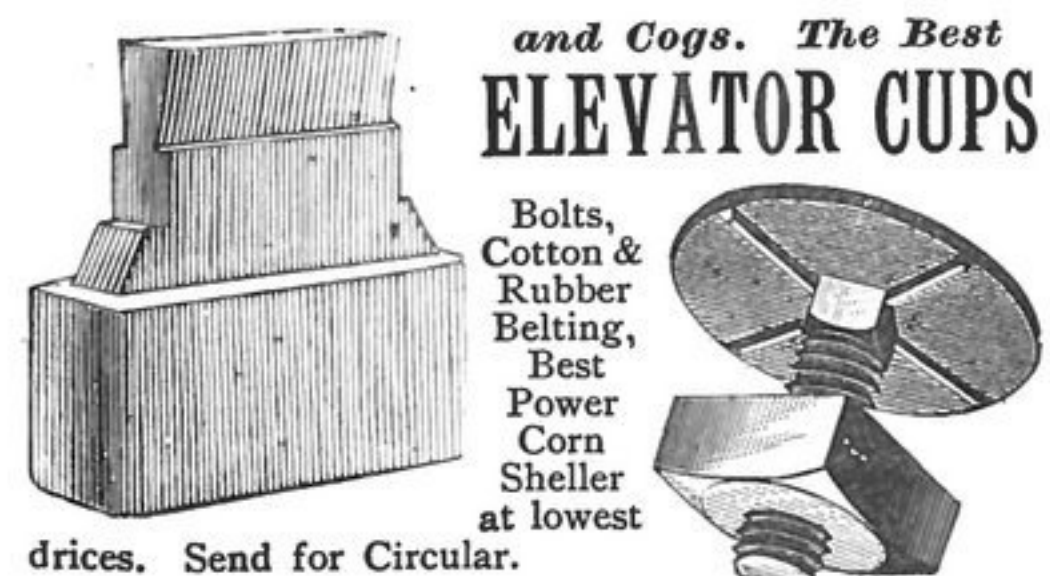
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True to Pattern, sound, solid, free from blow-holes, and of unequalled strength. Stronger, and more durable than iron forgings in any position or for any service whatever. 20,000 CRANK SHAFTS and 15,000 GEAR WHEELS of this steel now running prove this. CRANK SHAFTS and GEARING specialties. STEEL CASTINGS of every description. Send for Circulars and Prices to

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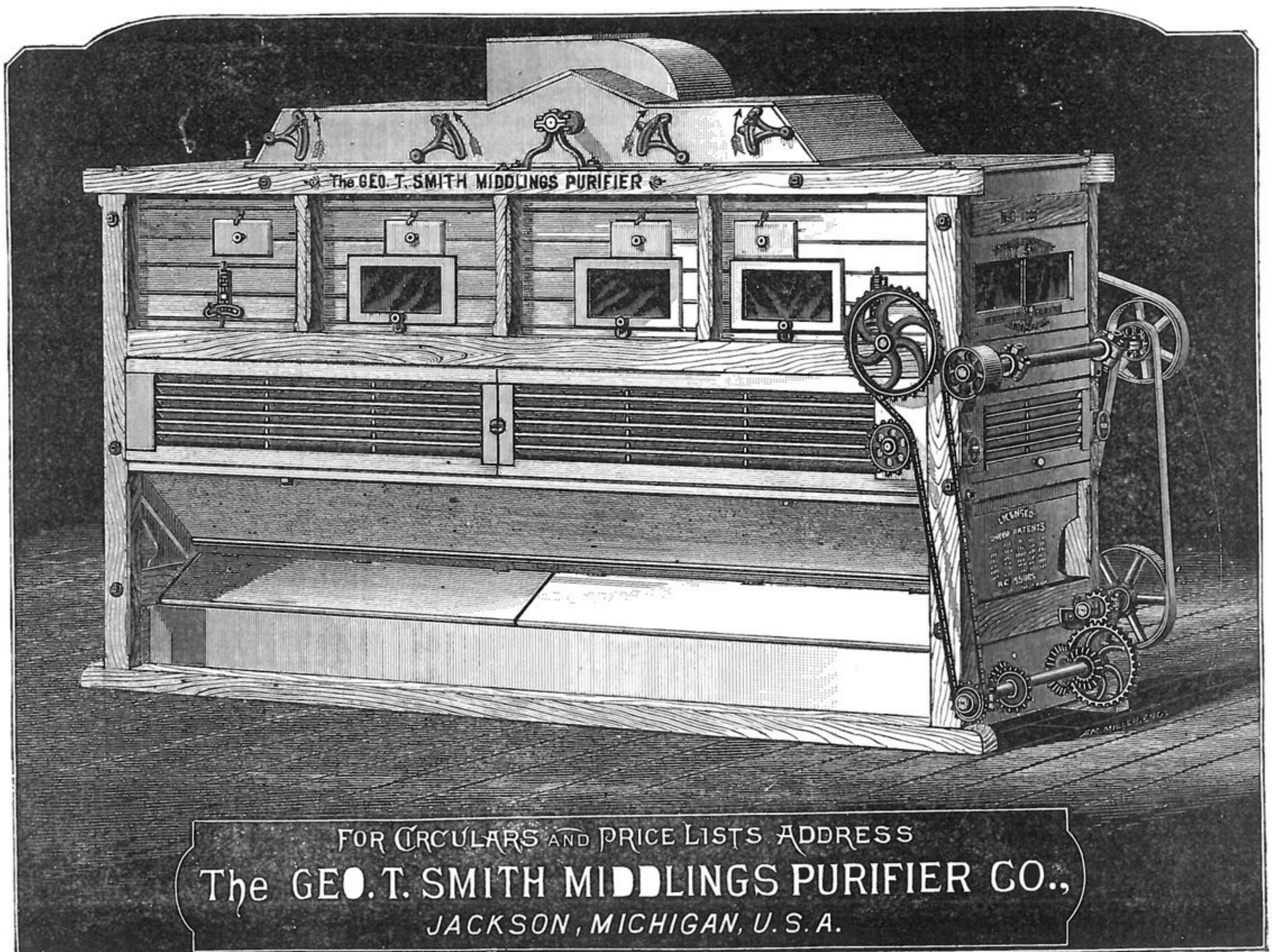


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THE PULLEY SIDE OF BELTS.

THERE are some questions in practical mechanics that never appear to receive a final and authoritative solution under whatever tests, says the *Scientific American*. To this class belongs the question: Which side of a leather belt shall run on the pulley face? In some establishments both ways are practiced, and it would seem that under these circumstances, so nearly uniform, the matter might be at last decided. But the foreman or superintendent who prefers the flesh side to the pulley face holds that his belts last longer than those run by the other foreman in another part of the establishment, who "turns his belts inside out." Of course prejudice has much to do in these cases, and probably prevents a fair conclusion. A writer in a recent number of a contemporary says: "I advocate running the flesh side to the pulley, for the following reasons: Leather is fibrous, and curiously constructed, as revealed under a microscope, in the form of a triangle, the tender part, or grain, representing the top part of the triangle, being very fine and delicate, whereas the flesh part, or bottom of the triangle, has a coarser and thicker fibre, and if it is properly skived will be just as smooth as the grain, although a great deal tougher, and will, therefore, stand more wear and friction. If you will notice belts that have run grain to the pulley for any length of time, you will find the grain cracked, and you wonder why. It is because you have subjected the tenderest part of the hide to the hardest usage; the friction has burned the grain, the burning brittled and hardened it; you can never restore it. If you let the flesh part do the work, the grain side being elastic, it will bind the coarser fibrous parts and keep them together."

The principal proprietor of one of the oldest and most extensive manufactories of leather belting in the country, recently declared himself as positively and unequivocally in favor of running the flesh side to the pulley, as the result of more than thirty years' observation, and he offered, among other reasons, the quaint one that the belt run thus was in the natural position of the hide. *Per contra*, the superintendent of a large establishment, where heavy machine tools are built, runs all his belts grain side to the pulley faces, claiming a much longer life to the belts and a closer contact between belt and pulley face. In this case, however, all the pulleys are of turned and finished iron. And it is possible that all these disagreements on this question may arise from the differences in the materials of the pulley faces. Wooden faced pulleys are coming into use again, particularly for pulleys above twenty-four inches diameter, and leather faced pulleys are very common. It is undeniable that there is a difference in the holding force of these differing faces, as there is in their materials.

* * A Wolverhampton firm has turned its attention to the manufacture of casks and barrels of steel, an exchange tells us. The two edges of the sheet of steel which form the cask are brazed together in such a manner as to justify the title of "seamless," which the patentees have applied to these productions. The head of the barrel is also riveted to the body, so as to leave no seam, and the end rims are shrunk on hot, thus making a very solid end, while, at the same time, the rims are thick enough to give a good purchase to the grappling hooks and hoists and cranes, for loading and unloading purposes. The bush for the tap does not project beyond the rim, so that the nozzle is

not liable to be knocked about and injured. The casks are more durable than wood, less bulky and lighter—an 18-gallon steel cask weighing some 10 pounds less—a not unimportant consideration as regards transit. In point of shape, a steel barrel is exactly that of a well-formed wooden one, the bulge of the belly allowing of its being easily rolled along, and better managed by one man than drums can be by two.

* * The interesting account of the journey of an electric tram car through the streets of Paris perhaps foreshadows a revolution in the conditions under which civilized man lives in great cities. Silently as a dream did that tram car travel over the metals of the Paris streets. No sound was there of straining harness, or hoofs pounding monotonously on asphalt or macadam; still less was there the ear-piercing shriek, the dyspeptic puff, the start, roar and bellow, of the locomotive. And the car, we are told, was more easily manageable, cost less, and was more satisfactory every way, than if it had been drawn by steam or horses. Is this the beginning of a happy change, when the rattling hansom and the clattering bus will trouble the nerves of civilization no more, and the town dweller be at rest? In the vision of the future one sees the promise of a time when it will be possible to converse in Mile End Row at mid day without shouting, and the Angel at Illington will be ringing round by a great solemn calm.

* * The value, per avoirdupois pound, of some of the new metals, varies very widely. According to a recent statement, the most costly of these is vanadium, a white metal discovered in 1830, viz., \$10,000; next to this comes rubidium, an alkaline metal, so called from exhibiting dark red lines in the spectrum analysis, \$9070; zircon and hyacinth, in the form of black powder, \$7200; lithium, an alkaline metal, the lightest metal known, \$5000; glucinum, a metal in the form of a grayish-black powder, \$5400; calcium, the metallic base of lime, \$4500; strontium, a malleable metal of a yellowish color, \$4200; terbium, obtained from the mineral gadolinite, found in Sweden, \$4080; yttrium, discovered in 1828, of a grayish-black color and perfectly metallic lustre, \$4080; erbium a metal found associated with yttrium, \$3400; cerium, a metal of high specific gravity, a grayish-white color and a lamellar texture, \$3400.

* * The German nations have the most books in their public libraries, and there are over a thousand public libraries in Germany, Austria and Switzerland, twenty of which contain over 100,000 volumes. Great Britain has only nine libraries containing 100,000 volumes, but the British Museum pays out \$80,000 annually to improve its collection. France has six libraries of over 100,000 books outside of the National Library, which is the largest in the world, and Spain has, all told, thirty public libraries, containing in all 700,000 volumes, of which 220,000 are in the library at Madrid. The library at Washington contains 513,000 volumes and 170,000 pamphlets, and there are but five larger libraries in the world: The French National Library, with 2,300,000; the Royal Library at St. Petersburg, with 1,000,000, that at Munich, with 900,000 and that at Berlin, with 750,000 books.

* * Something like 4,000 comets are supposed to have been seen since records began, the greater number of which were invisible without a telescope. Of these 285 have had their orbits determined. Prof. R. H. Tucke, Jr., of Lehigh University, studying these, finds indications that more comets come in from the hemisphere from which the sun is moving than from that towards which it is moving—that is, more turn and follow after than fly to meet their solar chief.

This is explained by the statement that by the time comets at a great distance have yielded to the attraction, not strongly felt until the sun is directly opposite them, the sun has passed on and they can only fall into his train.

* * The agitation in favor of opening the British public libraries and museums on Sunday goes steadily forward. The advocates of the reform are collecting statistics to show the prevalence of the desire for such a chance among the classes which would be most benefited by it. Of the workmen's clubs in London, eighty have voted in favor, and only one against the proposition; of trade societies, 163 support it and only fifteen oppose; of the Boiler Makers' Society, 2,739 members voted for and only 256 against; these are only sample figures. Such a showing is one of the strongest arguments that could be adduced in favor of "Sunday opening," and it must ultimately have its effect.

* * President White, of Cornell University, Ithica, N. Y., has received from the Hon. Hiram Sibley, of Rochester, now in Europe, a letter in which he directs that \$35,000 shall be expended immediately in adding to the building and equipments of the Sibley College of Mechanical Engineering in Cornell University. Mr. Sibley also announces his intention of adding \$50,000 to the endowment of the above-named department, making total gifts thus far over \$150,000. This gift places Cornell in the front rank of technical institutions.

* * Speaking about the usefulness of the much-abused toads, a careful observer reports that he has seen a toad swallow fifty four rosebugs for a single meal, and another feast of five large caterpillars two thirds the size of a lady's little finger. They will even take the hairy caterpillars that most birds dislike. Farmers and gardeners would do well to cultivate so useful, though humble friends, as these.

* * It don't pay to "drive" machinery. When the speed of a machine is more than normal, something is being strained, and the consequence of a continued strain is always the same. There is bound to be a giving way at some time, and it generally comes when the active work of the machine is most needed.

* * A simple device for preventing injury to workmen who are accidentally thrown against a fly wheel, has been adopted in England, and consists in filling the discs of the wheel with wood or other light substance. This is an easy remedy and a cheap one.

* * Of the 68,587,181 proof gallons of distilled spirits used in the United States

last year, over 44,000,000 gallons, it is stated, were used strictly in the arts and manufacturing industries, leaving less than 25,000,000 gallons to be consumed as drink.

* * Dr. Arning, late assistant to Professor Neisser, of Breslau, has been sent to Honolulu in order to study the pathology of leprosy, and especially to investigate the question of the role played by the bacillus of leprosy in causing the disease.

* * A company in Connecticut manufactures nearly all the liquorice used in the United States—17,000,000 pounds a year. Confectionery and medicines take 1,500,000 pounds, the remainder goes into tobacco.

DWIGHT CUSHMAN,



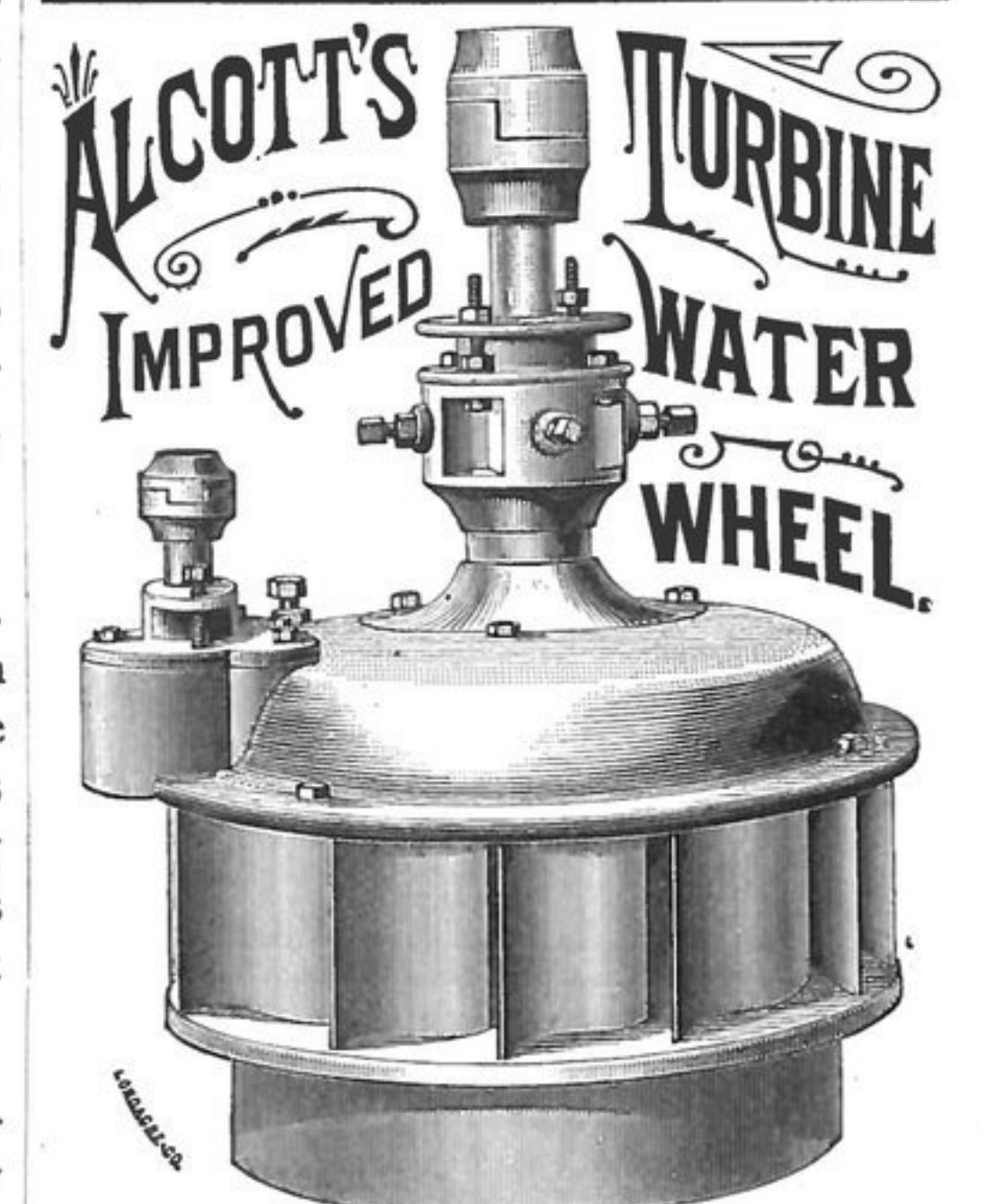
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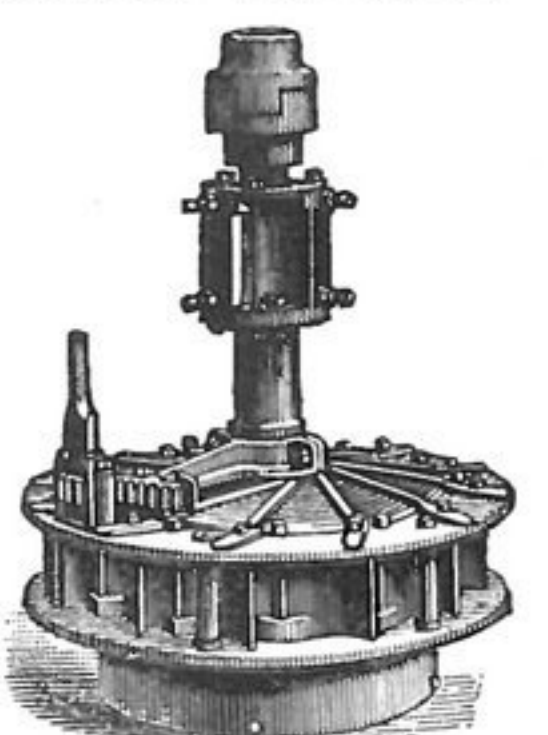
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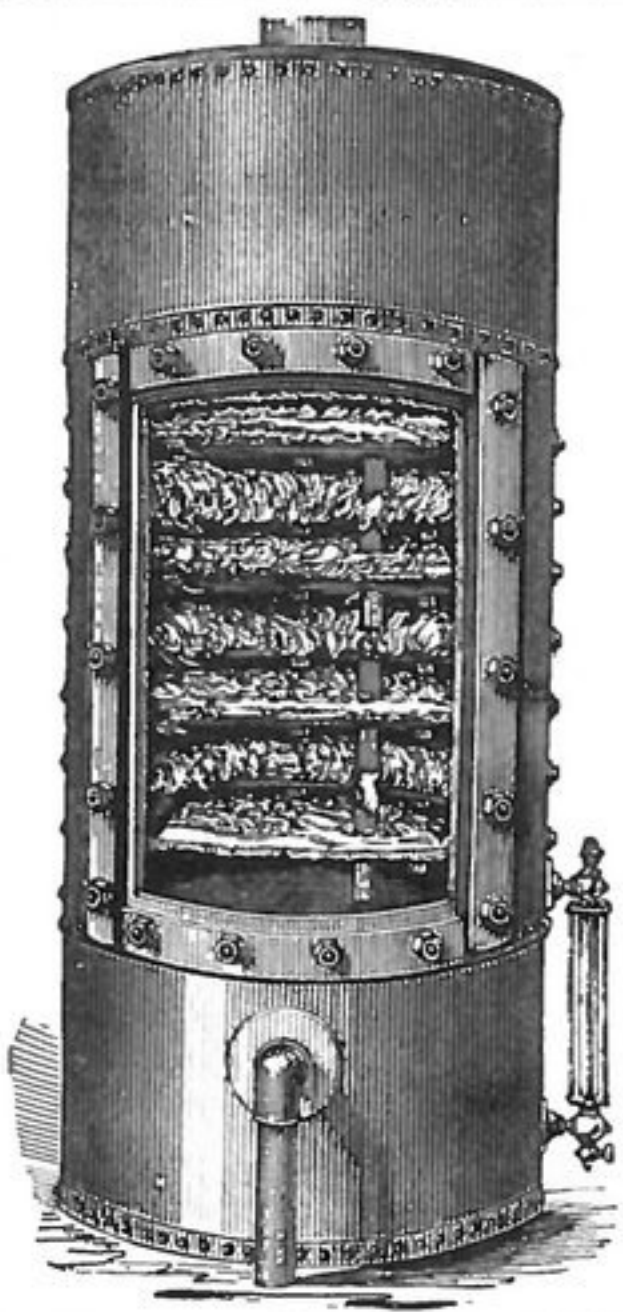
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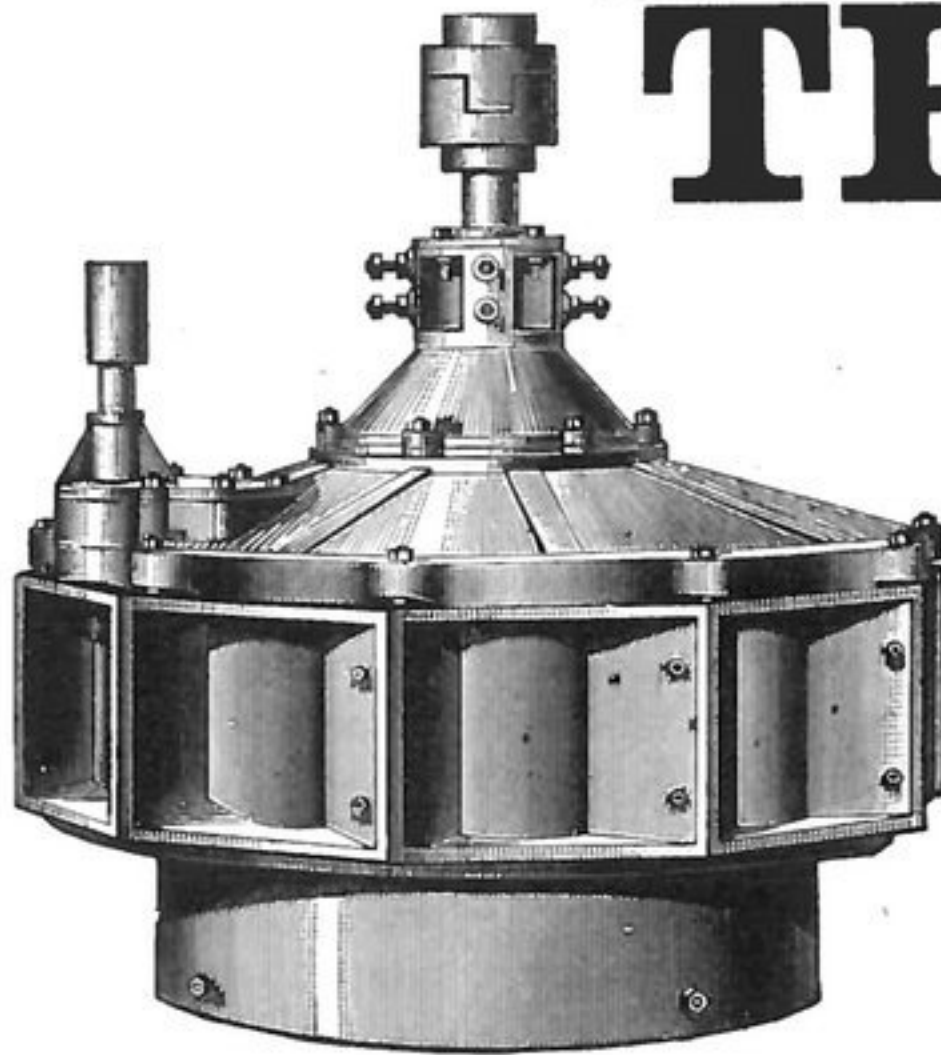
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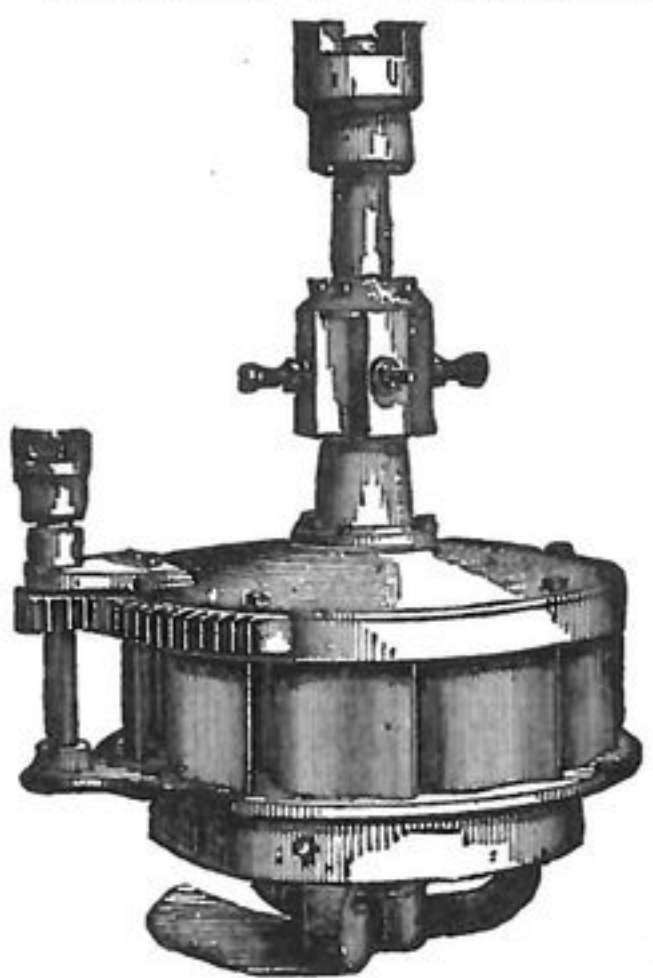
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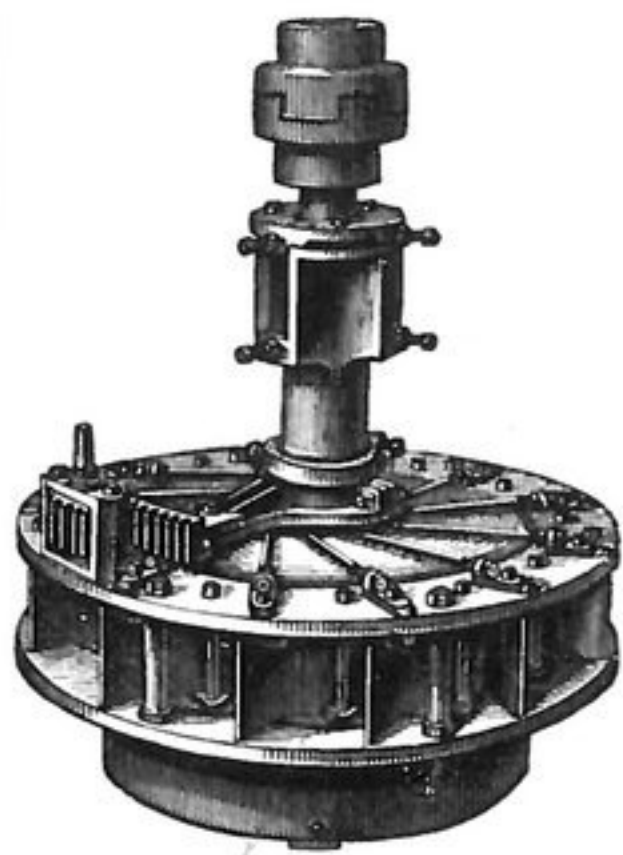
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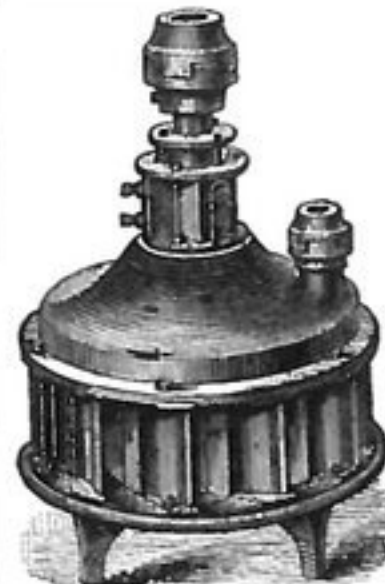


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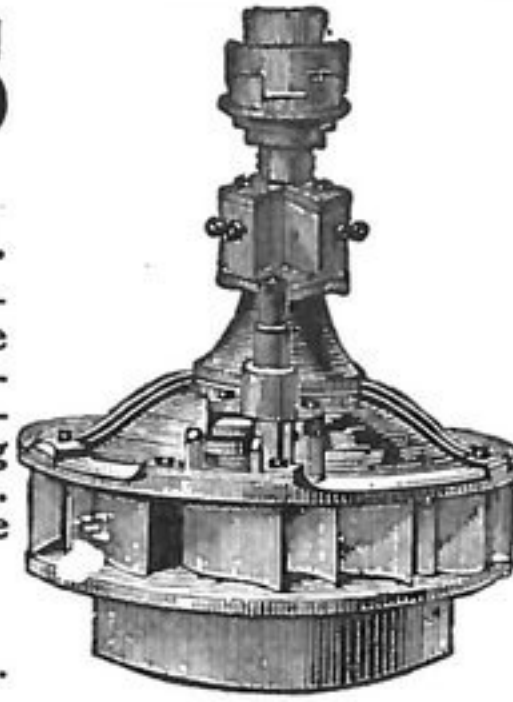
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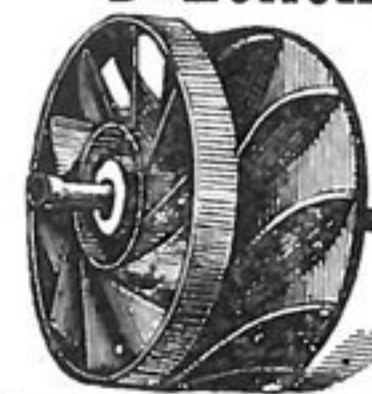
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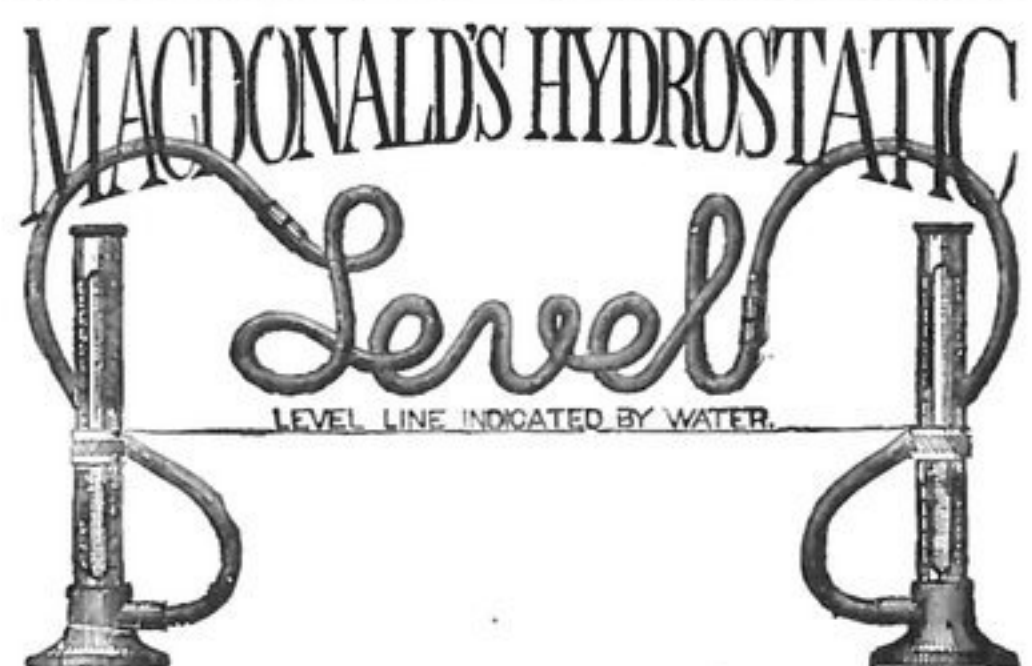
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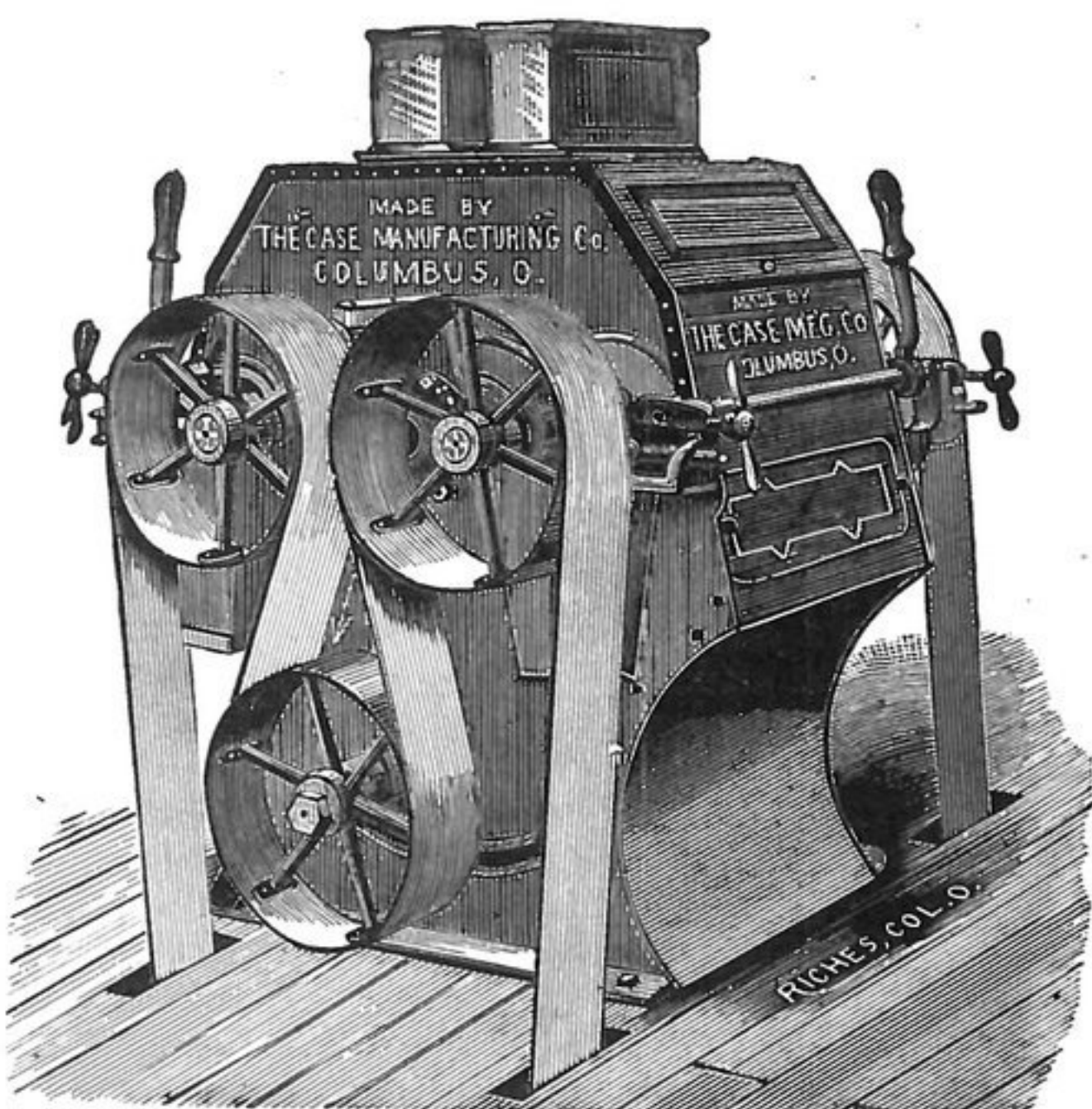
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"BISMARCK."



OUR MINNEAPOLIS LETTER.

[From our own correspondent.]

DULLNESS SETTLING DOWN ON THE MILLS—NON-SUIT IN THE CASE OF CRAVER VS. CHRISTIAN BROS. & CO.—A SCHEME FOR FIRE PROTECTION—GOSSIP AND NEWS—THE HEAD MILLERS' PICNIC.

The mills of Minneapolis have now for a long time kept up a steady and well-rounded output of flour, averaging not far from 100,000 barrels per week, and in doing this have been greatly assisted by the low freight rates prevailing. As rates have been advanced ten cents per barrel from Chicago east, this week, and the flour market has not thus far shown any marked signs of responding to the needs of the miller, there is a chance for the production to be whittled down. The mills have undoubtedly been making a margin, though a small one, and this the increase in freights threatens to wipe out if flour does not go up proportionately. Before the advance of freight, from the time of its announcement to that of its going into effect, there was an appreciable impetus given to operations, there being a general effort on the part of millers to get every barrel in on the old schedule possible, but now there is a certain indifference about pushing the mills, while some proprietors threaten to shut down if the situation does not improve. One of the results of this has been something of a falling off in the flour production this week, with the possibility of a greater loss next week. Millers say that they will operate their mills no longer than they can clear themselves, and present quite a firm, determined front. Domestic trade is somewhat improved, but is far from being satisfactory. Export business is fair, low grades being largely taken.

The subjoined table shows the receipts and shipments in Minneapolis for two weeks:

FLOUR.		
	Receipts. Bbls.	Shipments. Bbls.
June 17,	875	101,500
June 24,	1,750	106,200
Total	2,625	207,700
WHEAT.		
	Receipts. Bus.	Shipments. Bus.
June 17,	313,500	36,500
June 24,	324,000	48,000
Total	637,500	84,500

The receipts of wheat in amount nearly equal the number of bushels ground by the mills, but the proportion of high grade milling grain is falling off, as is natural at this period of the year. The stocks in store here hold out well, but at St. Paul the falling off has been considerable. There are about 1,900,000 bus. in the elevators here, and 250,000 bus. at St. Paul.

Chas. Craver has been nonsuited in his suit for \$10,000 damages against Christian Bros. & Co., proprietors of the Crown mill. Craver, while employed in defendant's mill about three years ago, lost a portion of his hand by getting the member caught in the uncovered gears of a roller mill. He was a stone dresser in the mill, and claimed that when the accident happened, he was discharging, at the orders of a superior, duties that did not belong to him, to allow the regular attendant of the rolls to go to a meal. The case came up before the District Court, Wednesday, and was dismissed after a partial hearing, the court holding that nothing was shown to be wrong with the machinery. It was conceded by most people, that Craver ought to have something, but he went at the matter in a sort of a bull-headed way, and failed to utilize the advantages in his favor. We understand that the defendants stood ready to give him \$500 to drop the suit, and while he himself was inclined to do this, was prevented by commission lawyers to whom he had fastened himself, and who evidently had hopes of making a big thing out of the case.

A. M. Bailly, of the Washburn mills, has evolved a scheme by which to place the milling district under constant control of watchmen, and to provide it with a well organized and equipped fire department. Mill-owners, however, do not seem to enthuse very greatly over it. But perhaps this is because it is to cost them quite an expense; but this, according to Mr. Bailly's idea, is to be more than counterbalanced by the saving of property and the decrease in insurance that it will bring about.

In the big fight for the 500 barrel mill to be built at Fergus Falls, the Pray Mfg. Co., of this city, seems to have come out ahead, though one frequently hears remarks emanating from the disappointed firms, to the effect that Pray has taken the job at a figure which will not permit of his retiring on the profits he will make out of it. Smith purifiers, Barnard & Leas cleaning machinery and Prinz dust catchers are to be used, and the Pray Co. furnish them, together with the iron work and all other machinery, except the rolls, the contract for which has not yet been let. The Stevens rolls, however, are said to have the inside track. Nearly every mill furnishing house of any prominence in the country has been after this mill, and the outcome shows that our home people are determined to hold their ground.

Al. Mowbray, Winona's well-known miller, has withdrawn from the Winona Mill Co., and is succeeded as head miller for that company by Henry Brooks. If we were to credit common report, we should be led to believe that he was frozen out by the other stockholders. Mr. Mowbray came into prominence in the early history of the purifiers, and has all along maintained a leading position as a miller. His stepping down and out of the Winona company at this time, has caused a great surprise. The controlling stock in that company is held by the Douds, the coopers.

Geo. Zimmerle, a miller well known in this section, will go into the milling business at Galesburg, Ill. A stock company, composed of George and other parties, has been formed, and a 100 barrel mill will be erected by it at that place. Zimmerle acting as miller. Finch rolls and Morse elevator bolts will form a principal part of the mill's machinery. It is to be run by steam, however.

F. C. Pillsbury, of the great milling firm, has a horse which has trotted a quarter of a mile in 34 seconds. Fred is the sporting member of the firm, and is prominently identified with the horse-men of the state. Chas. Hoit, head miller of the Pillsbury A, is likewise an admirer of fast steeds, and quite a chum of Mr. Pillsbury.

According to common report in Minneapolis, the Stilwell & Bierce Mfg. Co., are contemplating the experiment of getting along without purifiers in a mill. It is said that the company will try this scheme in its experimental mill at Dayton, O.

The Palisade Mill, which had been kept idle for the previous five weeks, was started up June 15, and has run quite regularly since. Its running steadily, however, the remainder of the crop year, is considered a little uncertain.

Jack Finch, the well-known millwright, is out with a new roller mill. The rolls are six inch rolls, and are arranged one above the other. Jack will play the machine for the trade of 50 to 200 barrel mills.

To the report that B. F. Smith's mills, at Benson, Minn., had been shut down by E. H. Steele, of this city, foreclosing a \$39,900 mortgage on it, Mr. Steele denies that any mortgage has been foreclosed.

The Washburn A, and Northwestern Mills are being fitted up for the electric light, and will be lighted with electricity in a few days. They will be the first mills beside the Pillsbury A to take this step.

Hugh More is to build a fifty barrel mill at Moonton, Dak., and the Pray Mfg. Co. furnishes the machinery, as it does also to change over the mill of F. W. Murray, at Clearwater, Minn.

The Washburn will case is before the Minnesota Supreme Court, for decision on the point of what portion of the estate the insane widow shall be allowed.

A. F. Pray, son of our popular mill furnisher, recently graduated from the military academy at Chester, Pa. He was senior captain in the school.

E. V. White, formerly at the head of one of our heaviest milling firms, but now operating a mill in Kansas, was in the city several days this week.

The Washburn C mill has just put in a new American water wheel, in place of an old one of the same make. It is a 60-inch wheel.

F. E. Hale, ye "ad" man of the *Millstone*, was here several days last week, and "took in" the millers' excursion.

J. A. Wells, late of the Palisade mill, has gone to Bellevue, Iowa, to take a position in A. Reiling & Co.'s mill.

The Lincoln mill, at Anoka, Minn., has been shut down.

THE HEAD MILLERS' EXCURSION.

The millers' excursion and picnic came off last Saturday, and it turned out to be a greater event than anyone had expected. There were 2,500 or more people that attended, and it was overwhelming the manner in which enconiums were poured upon the head millers for their fine management. It took over thirty coaches of the Manitoba road to transport the crowd to Minnetonka Beach, Lake Minnetonka, and while the spacious grounds

about Hotel Lafayette were well utilized, there was ample room and comfort for all. The exercises at the lake embraced a variety of sports and entertainments, and allowed no one to grow weary. Very soon after arrival at the grounds, President Walsh, of the Head Millers' Association, delivered a short address of welcome, and was followed by a speech of some length by Charles McC. Reeve, the cooper, who was orator of the day. Mr. Reeve reviewed the development of the milling interest in Minneapolis, from an early period to the present, and the important part that the head millers had played in it. He next spoke of the Minneapolis Head Millers' Association, under whose auspices the excursion was held, and after a word as to its organization two years ago, concluded as follows: "But, while the Head Millers' Association has primarily for its object, mutual improvement and scientific advancement, its efforts are now directed toward the accomplishment of a kindlier and more sacred end. No monument marks the spot where rest the brave men who, on that fatal 2d of May, were ushered, without a moment's warning, into the presence of their Maker. And so this association proposes, by means of these excursions and such other ways as in their power lie, to raise funds sufficient for the erection of a monument in Lakewood to the memory of their departed comrades and co-workers. Their best efforts they will bend in this direction, feeling doubly sure that their friends in Minneapolis will not fail to respond nobly when called on so to do in behalf of such an object."

Mayor Pillsbury also made a short speech, in which he said he was glad that the millers had inaugurated these annual excursions, and hoped that they would be continued; he knew that the mill owners were willing to shut down their mills one day in the year to give their employees an opportunity to enjoy the pleasures of a day at the lake. He closed by appealing to all; when called on, to contribute toward the erection of a monument to the eighteen brave millers who perished in the catastrophe of 1878.

As the speeches were concluded, attention was turned to the sports of the day. First on the programme was a game of base ball between nines from the Pillsbury A and Washburn mills, for a champion silver cup, offered by the association. The game was won by the Pillsbury nine, by a score of 17 to 7. Then came dinner, and after that a sack race occurred between the head millers, President Walsh being the victor. The millers participating were: M. Walsh, Wm. Helfrich, Jas. McDaniels, Jas. Tamm, C. N. Wright, J. F. Stevens, John Dodge, T. A. Baker, C. G. Hoit, E. Stahler, John Davin, H. Bidwell, John Kraft, Thos. Scott, and T. L. Clark. Messrs. Tamm, Dodge, and Bidwell, came out respectively second, third and fourth. This race was a source of much merriment and sport, and was a big hit. Then followed another sack race, a foot race, foot ball, and finally, a tub race, which concluded the exercises. Dancing was carried on in the pavilion on the edge of the lake, and those that cared for a ride on the lake were accommodated by the steamer Belle, of Minnetonka, which the millers had chartered for the day. The excursion returned to the city about 6 p. m., all in the best of spirits and highly pleased.

Machinery men were very thick, the list embracing Wm. McLean, M. D. Beardslee, J. Silas Leas, W. J. Fender, Mr. Vaughn, and several others. Mr. Fender was made the judge of the games. Messrs. Hale & Cawker were the outside milling newspaper men present.

Though the final settlement has not been made, it is known that between \$1800 and \$1900 were realized from the excursion receipts, and \$500 will not be far from the amount cleared.

Minneapolis, June 28. CALEB.

Notes from the Mills.

John Hoffer, Harrisburg, Pa., has ordered one patent automatic feed for his rolls from the Case Mfg. Co., Columbus, O.

Two No. 1 double purifiers have lately been shipped to O. F. Barber, Golden, Col., by the Case Mfg. Co., Columbus, O.

E. P. Allis & Co., of Milwaukee, Wis., will place in the mill of Proctor Taylor, Pontiac, Ill., a Gray's noiseless belt roller mill.

The Case Mfg. Co., Columbus, O., have an order from Wm. Linsey & Son, Humboldt, Kan. for two patent automatic feeds for rolls.

J. M. Piazek, Valley Falls, Kan., has placed an order with E. P. Allis & Co., Milwaukee, Wis., for a Wegmann Victoria porcelain roller mill.

D. D. T. Farnsworth, Buckhannon, W. Va., is putting in a Gray's noiseless belt roller mill, furnished by E. P. Allis & Co., Milwaukee, Wis.

A Gray's noiseless belt roller mill, furnished by E. P. Allis & Co., Milwaukee, Wis., is to be

placed in the mill of Samuel Williams, Carthage, Mo.

A. W. Martin, Hagerstown, Md., has placed his order with E. P. Allis & Co., Milwaukee, Wis., for twelve pairs of Allis rolls in Gray's noiseless belt frames.

J. W. Mason, of Wasioja, Minn., has just given an order for six pairs of rolls, with patent automatic feed. The Case Mfg. Co., Columbus, O., have the order.

McDaniels & Wright, of Franklin, Ind., are remodeling their mills upon plans and programme furnished by the Richmond City Mill Works, of Richmond, Ind.

Hamilton Bros. & Co., of East Liberty, Ohio, have contracted with the Richmond City Mill Works, of Richmond, Ind., for the complete outfit, including automatic engine, for a 100-barrel roller mill.

J. W. Zaring, of Shelbyville, Ky., has yielded to the pressure and will at once change to the roller system. His mill was built by the Richmond City Mill Works, of Richmond, Indiana, and the same firm have the contract for the new job.

Wm. Radston, of New Carlisle, Ohio, is building a complete gradual reduction mill on the roller system, to have a capacity of 150 barrels per day. He has awarded the contract for the complete outfit to the Richmond City Mill Works, of Richmond, Ind.

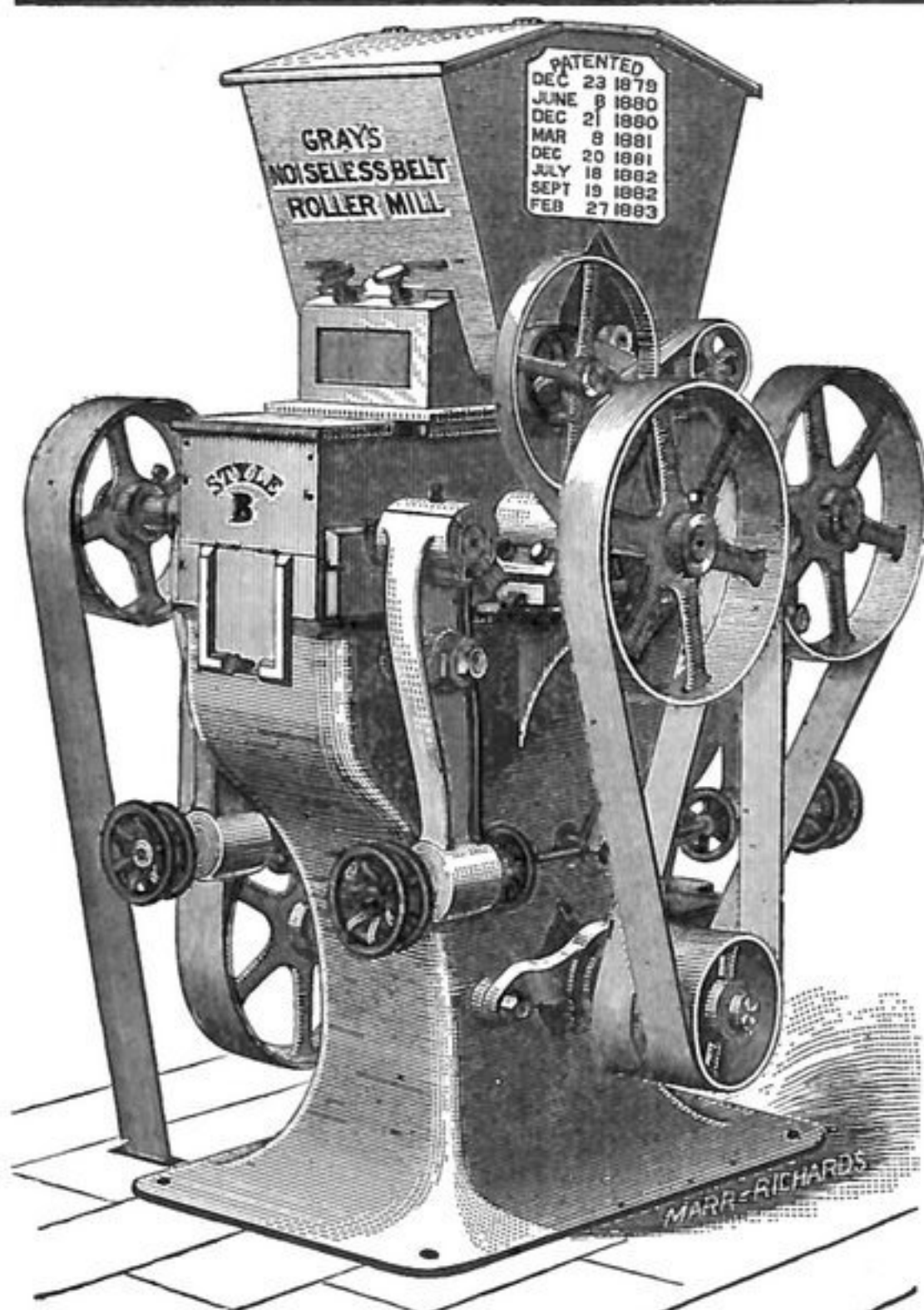
E. J. & J. B. Raft, of Hiawatha, Kansas, have contracted with the Richmond City Mill Works, of Richmond, Ind., for the rolls, reels, cleaners, purifiers and machinery, necessary to convert their mill into a complete gradual reduction mill, with a capacity of 100 barrels per day.

The Richmond City Mill Works have contracted with E. P. Allis & Co., of Milwaukee, Wis., for six pairs of Allis rolls in Gray's noiseless belt frames, for Landes, Beall & Co., Arkansas City, Kan., and ten pairs of Allis rolls in Gray's noiseless belt frames for J. G. Bayne & Sons, Bagdad, Ky.

The Case Mfg. Co., Columbus, O., have lately been awarded the contract of E. Pearce & Co., Shreve, O., for a complete outfit of breaks, rolls, purifiers, centrifugals, scalping reels, bolting chests, &c., for a full gradual reduction mill on the "Case" system. Twelve pairs of rolls with patent automatic feed will be used and the mill when completed will have a daily capacity of fifty to sixty barrels.

A boiler in Von Behren & Shaffer's flour mill at Stryker, O., exploded June 27, blowing the mill to atoms and burying over thirty men. Eleven were recovered in a dying condition. All were heads in families. Pieces of the boiler, machinery, and building were thrown half a mile. One piece of the boiler was thrown against a dwelling a quarter of a mile distant, taking the roof away and seriously injuring two occupants. The cause of the explosion is unknown. Engineer Foster was blown 200 feet, and so badly hurt that he soon died. E. R. Ayers was blown through the roof, striking the ground 200 feet away. He cannot live. Every limb on his body was broken. W. Roop was taken out the debris after several hours labor. He is dying. Robt. Shill, J. H. Breman, Frank Douglas, J. Ramsey, and a man named Keller are among those seriously injured. The explosion was heard fifteen miles away. People five miles from the scene thought an earthquake had occurred. Cries for help came from beneath the ruins for five hours. Citizens ran to the mill by hundreds, and women whose husbands were among the victims filled the air with their cries.

Ever since it has been known that the Anchor Mills, of St. Louis, Mo., capacity 2000 bbls. were to discard their present various reduction machines and rolls, agents of a number of roller mill makers have been making life a burden to the gentlemanly Vice-President, Mr. John Crangle. However, he is now at peace, though of late he has been a stranger to it, for even in his dreams, we have no doubt, the various shapes of corrugations and belt drives were vividly in view. To relieve himself of the perplexity into which he was thus thrown, Mr. Crangle, accompanied by his head miller, Mr. Dan Foley, visited various flouring mills planned and erected by the leading mill building firms, situated in different parts of the country. His action upon his visit to Indianapolis, and adopting the Nordyke & Marmon Co., roller mill, and his personal order for 26 pairs, is a strong endorsement of a similar action by H. D. Rush & Co., of Leavenworth, Kan., in ordering an 800 bbl. roller mill outfit of this same firm, and has the effect of placing Messrs. Nordyke & Marmon Co., in the estimation of Mr. Crangle at the front as mill builders. Mr. Crangle expressed considerable surprise at the magnitude of the establishment at Indianapolis.



GRAY'S NOISELESS BELT ROLLER MILLS.

STYLE "B" for SMALL MILLS

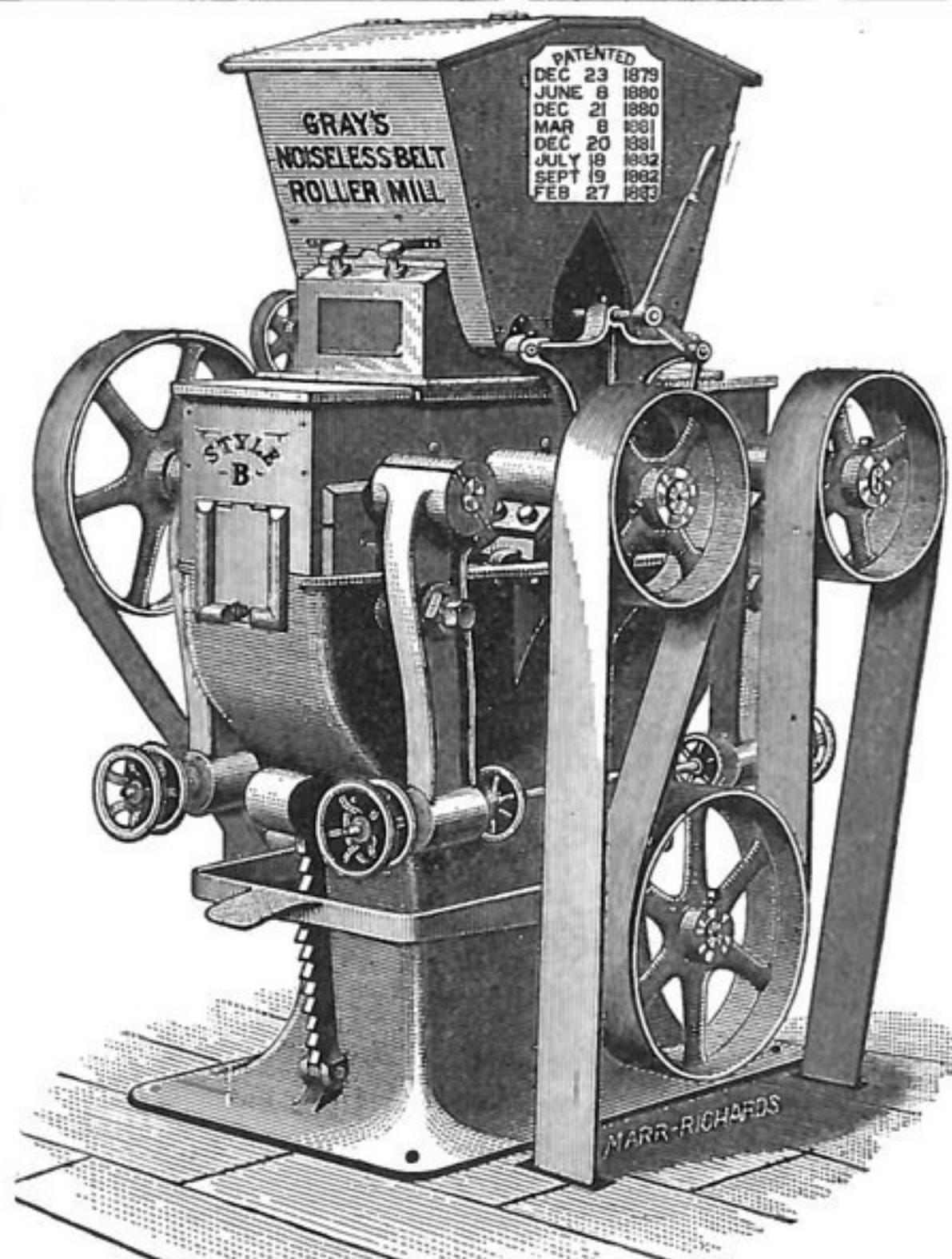
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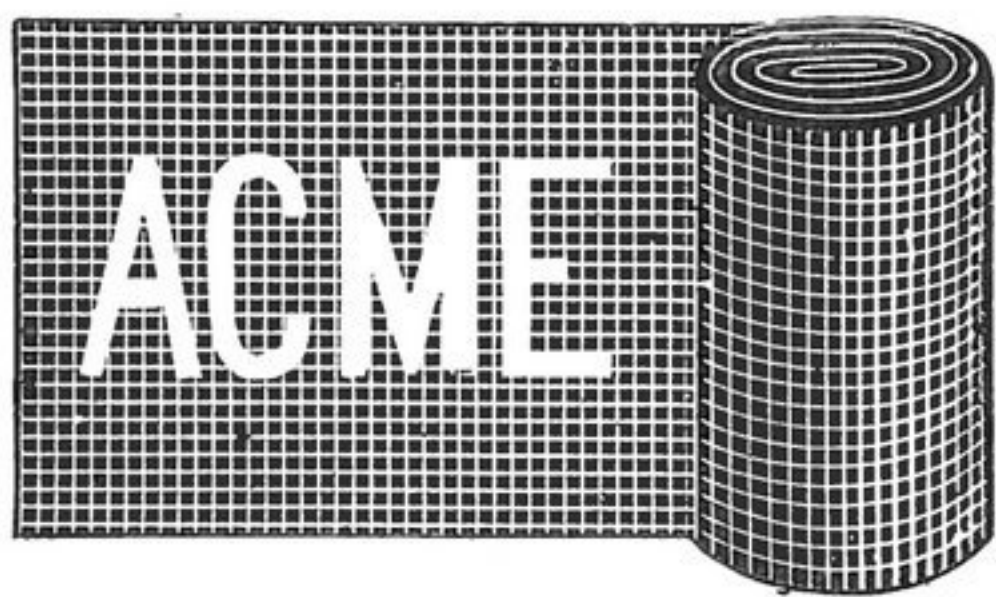
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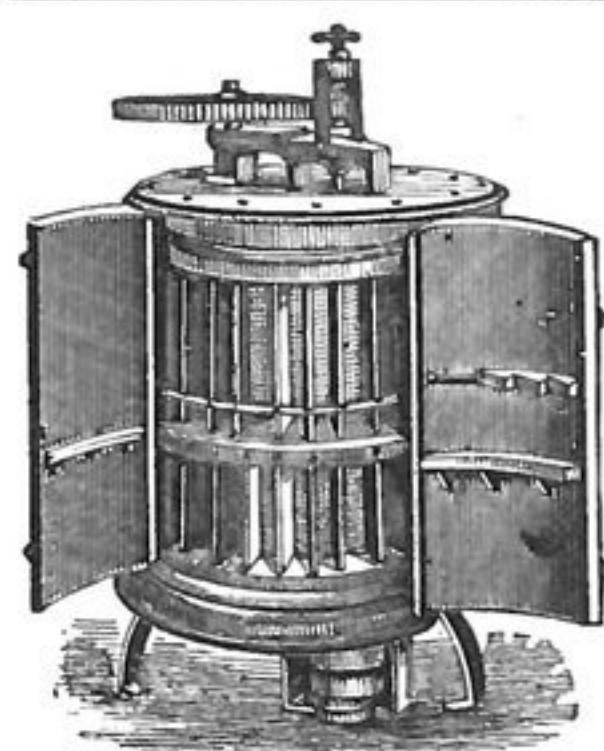
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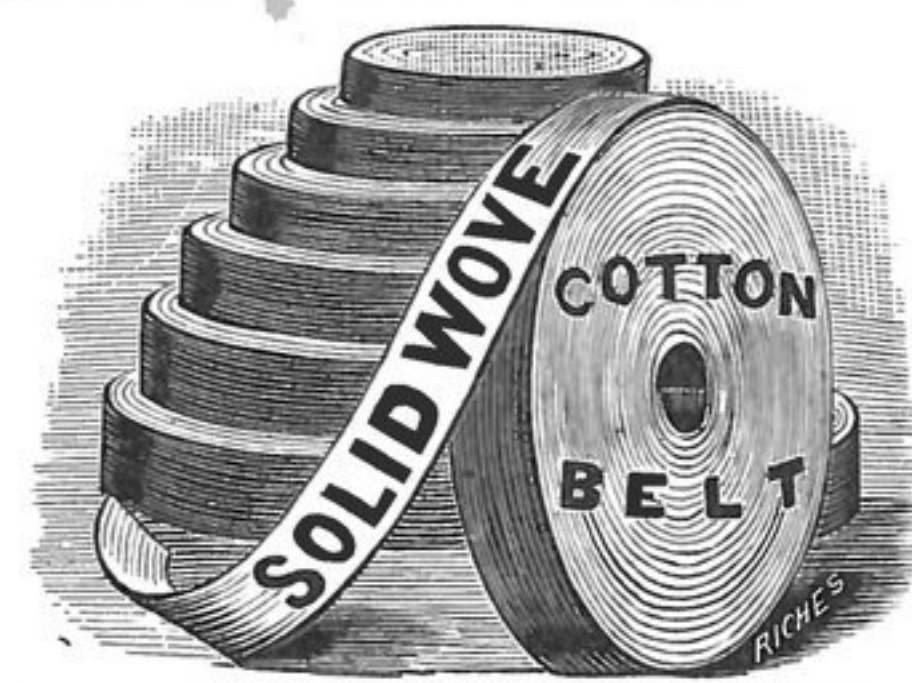
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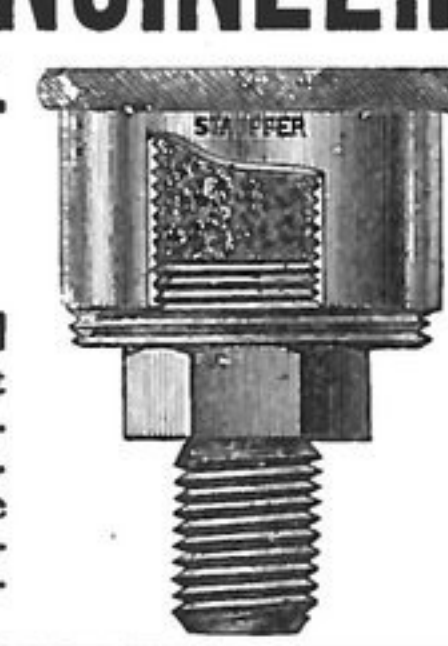
The Case Mfg. Co., Columbus, Ohio.



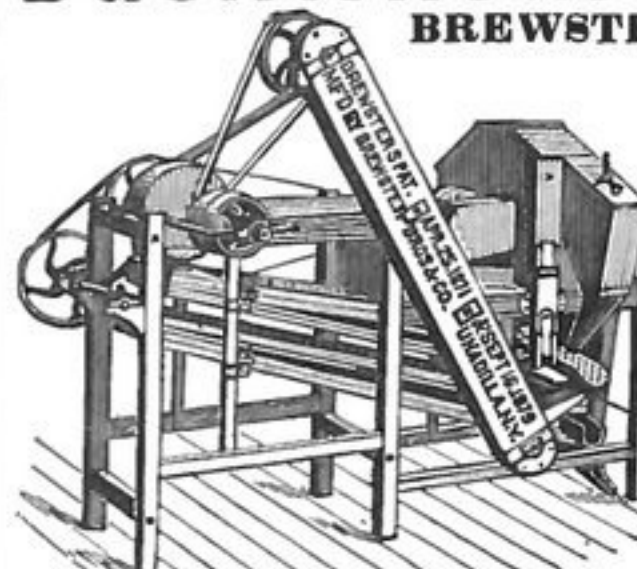
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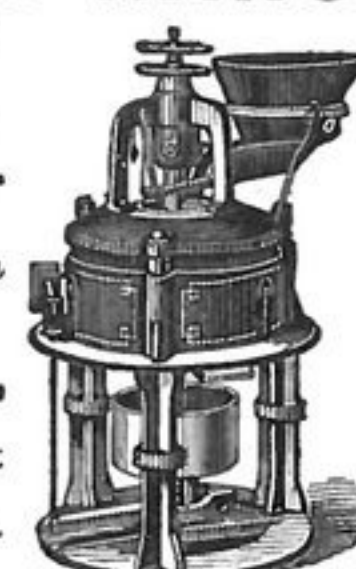
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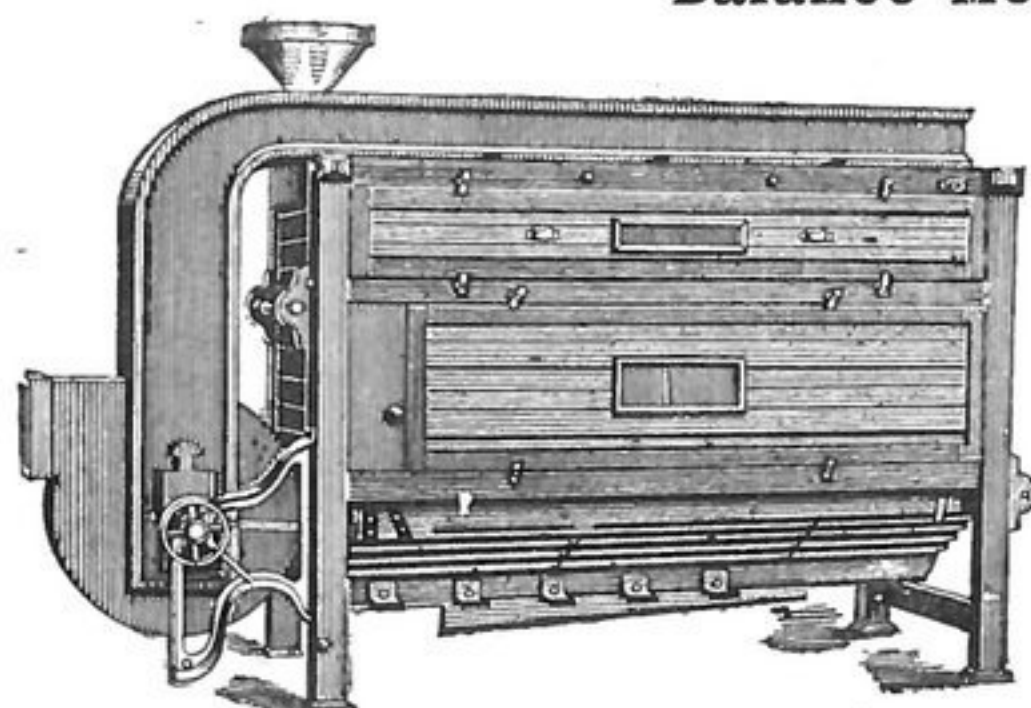
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GRAIN TARIFFS IN ITALY.

THE recklessness of the Italian tariff advocates reaps at present one satisfactory result, we are told by German journals. Almost all the Italian press have discussed and rejected the proposed increase of the grain tariff as a means to benefit few and harm many. It is gratifying to note that the number of these protectionists is small; and that only three or four senators will support the ancient theories about political economy, while the large majority are opposed to them. The granger protectionists, in the meantime, continue their campaign among the farming population, and find it an easy task to obtain followers from the poverty-stricken inhabitants.

It has been stated that the Italians are given to too much theory, and do not attempt to defend their agricultural interests from a practical point of view. But the fact is that Italy has, at present, a higher grain tariff than any other civilized country, and it is a curious spectacle to find French protectionists clamoring, as their last resource, for a tariff which seems high enough for them, but which is yet less than that of Italy, and which there is considered insufficient. In spite of all this, the Italian protectionists do not lose courage, and hold on to their ideal theory. They quote Spain with a grain tariff of 4.20 Lire per 100 pounds, and Portugal with 5.60 Lire, as brilliant prototypes of political economy; other countries are, of course, not mentioned in this connection. Nevertheless, the much abused grain importation into Spain and Portugal is quite considerable, and large quantities are sent there from Italy which is now sentimental enough to allow American grain import.

The position of the Italian government on this question is well illustrated by the recent speech of Minister Grimaldi, who stated that his government had no intention whatever to allow any increase of the grain tariffs, partly because such action would be contradictory to the principles of a healthy political economy, and partly, because the increased tariffs could be looked upon as an efficient means to work a beneficial change in the existing conditions of the country.

FOREIGN WHEAT CROPS.

Detailed reports on the French crops, which have been appearing in the *Echo Agricole* during the last three weeks, are on the whole encouraging, though they show that some discount must be taken off earlier estimates. Damage by drouth and frost is noted in nearly all of the departments, but rain fell a week before it came in England, and fears of serious damage were then dissipated more or less. If favorable weather should prevail up to harvest, France will probably not require to import much wheat. At present the temperature is too low in the north of France, as well as in England, and as there are complaints of rust in some of the departments, the prospects are still doubtful. In Europe, generally, the weather has been similar to that of France and England, drouth and night frosts having been general, and crop prospects are also similar. A misleading telegram from Odessa last week represented the wheat crop in southern Russia as having been badly damaged by drouth. This has been corrected by a well-informed Russian writer, who explains that it is only true of the small district around Odessa, the crops in south Russia, as a whole, being generally in a satisfactory condition, though varying considerably. As these advices come from men in the trade

they are not regarded as conclusive, but official confirmation would certainly influence prices.

The *Mark Lane Express*, in its weekly review of the British grain trade, during the week ending June 23, says: "Broadly speaking, the weather has favored the strongest and most forward wheats and prejudiced other growing crops. It is impossible as yet to estimate the results of the wheat harvest. The present indications tend in the direction of making the best better and the indifferent worse. The business in foreign wheat has lapsed into a state of coma. In cargoes off coast little is doing. There were eight arrivals and three sales. Seven cargoes remained, among which was one of California wheat. About forty cargoes are due the present week. The quotations of cargoes forward are nominal and there is no inquiry. The sales of English wheat during the week were 47,529 quarters at 37s. per quarter, against 48,904 do, at 42s. 5d. per quarter, for the corresponding week last year."

NOTES.

The building of the Phoenix mill at Breslau, Germany, is progressing rapidly.

The International grain and seed fair of Vienna will be held this year on August 25 and 26.

It is proposed to hold an American exhibition in London next year, but so far no actual steps have been taken.

The failure was announced recently of Mr. Alderman Hadley of London, Eng., the first president of the National Association of British and Irish Millers.

An international exhibition for artisans, instituted by the Austrian Society of Arts, under the patronage of the Archduke Carl Ludwig, will be opened in Vienna on July 24, and closed on October 12 of this year.

It is stated that it is the intention of the President of the British Millers' Convention at Stockton to bring forward a proposal or scheme respecting the greater protection from fire in corn and flour mills, which if adopted will much lessen the risk, and consequently reduce the existing high rate of premiums on mill insurance.

Proceedings were taken on Tuesday at the Worship Street Police Court, London, against a number of bakers and confectioners for allowing their bakehouses to become dirty. The prosecutions were instituted by the Bethnal Green Vestry, under a recent Act, which came into operation in January, and these were the first cases. Fines ranging from 1 to 20s. were inflicted.

The West India members of the Spanish legislature advocated the suppression of export duties, reduction of import duties, reduction of expenses from \$34,000,000 to \$24,000,000, and the early conclusion of a treaty of commerce with America as the only means of extricating Cuba from economical depression now existing. The government declared it was impossible to satisfy Cuban aspirations for better commercial relations with America, which would damage the peninsula trade with the colonies.

The "Metropolitan Bread and Flour Company, Limited" is the name of a company just started, with a capital of £100,000, in 20,000 shares of £5 each. Messrs. Powers & Sons' Albion Mill, at Kings Cross, has been purchased by the company, who have acquired the right to use Mounie's patented system for baking bread, &c. Mr. Geo. Powers will join the Board after allotment, and Mr. Fred. Powers will be superintendent of the milling department. It is proposed to commence operations in connection with the mill in question, and subsequently to erect a bakery on Mounie's system, adjoining the mill.

The Japanese are coming to the front as workers in iron. Late reports state that Japanese capital is to be invested in a large iron works at Kobe, which are at once to be run on full time with abundance of orders ahead. The hands will be native, having been trained at works in Tokio. Among other home improvements, the armor for new war vessels will be forged from home material, a fine quality of ore having been found that compares favorably with what is considered good ore in European iron districts. The Japanese are good imitators, if not capable of great originality, and the lessons their students have learned abroad are bearing good fruits.

As illustrating the progress of roller milling in Great Britain the *Miller's Gazette* tells us that Mr. J. H. Carter has started two complete plants, and obtained contracts for no less than six others

during the past week, in different parts of the country. Amongst the latter, is one for a very large plant for Messrs. Healing & Sons, of Tewkesbury who possess one of the finest mills in England. Another contract is for Messrs. Robinson Bros., of Rotherham. These gentlemen are brothers of Mr. Robinson of the firm of Robinson & Doncaster, whose mill was erected in Carter's best style. Mr. Carter is now engaged in erecting seven new plants in the West of England alone.

At an agricultural gathering on the 1st inst., at Rambouillet, M. Leon Say delivered a short speech on the prospects of French, and more especially local, agriculture. French agriculture generally, he said, was suffering, for there was no questioning a fact which was patent to everybody, and, as in all cases of suffering, there were a great many sham doctors with remedies cut and dried for curing it. People were talking of making it compulsory to grind American grain in France. He did not see how agriculturists could benefit by protection to the millers. Other similar remedies were suggested. French agriculturists would do better to reckon on their own efforts than the Government assistance. The fiscal burdens of France, however, said M. Say, were too heavy, and the burden of the great army kept up by France was felt most heavily by the agricultural population.

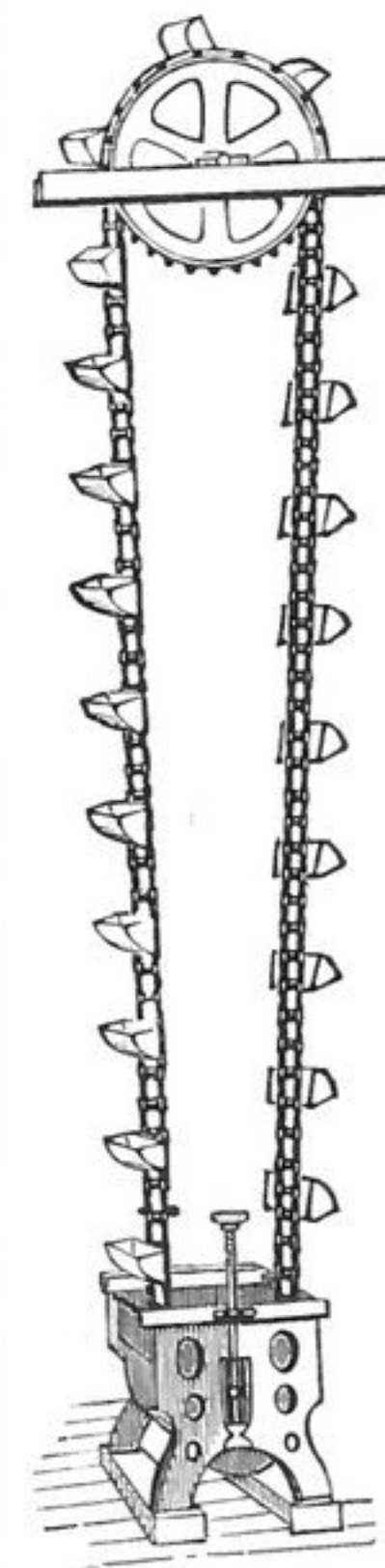
According to the Buenos Ayres *Standard* of May 22, the export of grain to Europe from the Argentine republic continued active and large quantities were still coming down from the interior. The production of wheat this season has been very large, and the farmers are said to have dropped much money owing to the low prices ruling in the market. Receipts of wool were small, and the principal operations were carried out in the deposits and "barracas." There was an improved feeling in the market, owing to better advices from London. Nearly all the French wool buyers had left the market. The clip up to date shows an increase of about 30,000 bales compared with last year's figures. Immigration from the Mediterranean continued very brisk, and in order to stimulate it still further a bill is before Congress appropriating \$600,000 to defray the passage of skilled laborers, farm hands, etc. What a curious commentary is this upon the bill now before our own Congress excluding European labor of this very class, says an exchange.

Every attempt to place Mexican international commerce upon a satisfactory basis by the intervention of law seems destined to meet with some fatal discouragement, says the *N. Y. Commercial Bulletin*. Not long since, it will be remembered that the Government promulgated a new law providing for the importation of goods in bond to interior points. An official was then sent to the frontier to make the necessary arrangements for carrying the law into effect. These were completed satisfactorily and the law was about to go into operation, when, to the surprise of everybody, the official was recalled and the arrangements were revoked at Paso del Norte, Piedras Negras and Nuevo Laredo. "Meanwhile," says the *Mexican Financier*, "the most outrageous obstructions are thrown in the way of importation by the officials at those points, and smuggling is going on in the most open and barefaced manner. This is creating an exasperated feeling against Mexico among those having trade relations here, and if matters are allowed to proceed in this way the consequences cannot fail to be serious, while the customs receipts are sadly diminished at a time when they are most needed. Why is it that the Government tolerates, and even countenances, as it seems that it does, this state of things?" If we might venture an answer, it would be that "the Government" or the Government officials have no scruples about sharing in the "smuggling," the profits of which are enormous. In such a country, under such government, it looks as if honesty was considered anything but "the best policy."



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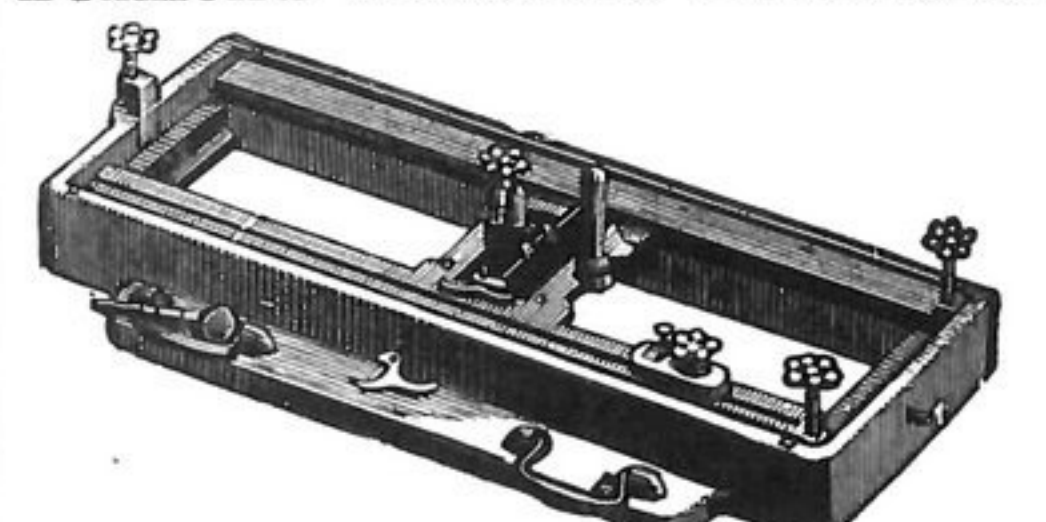


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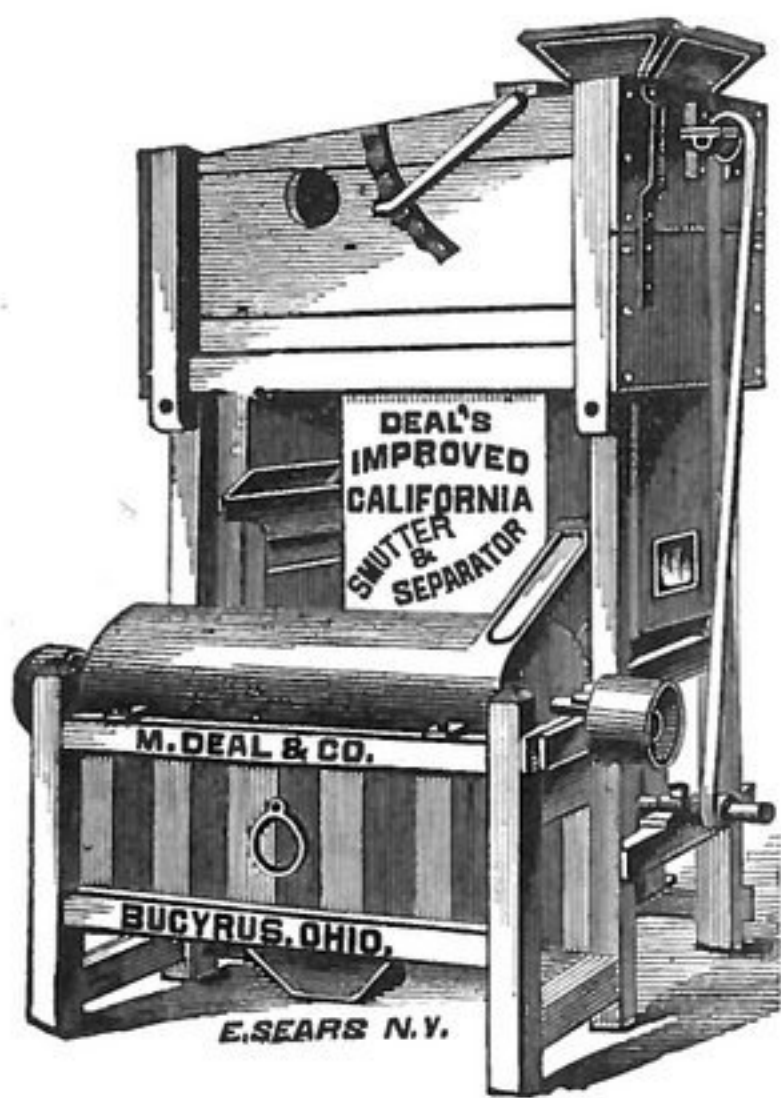
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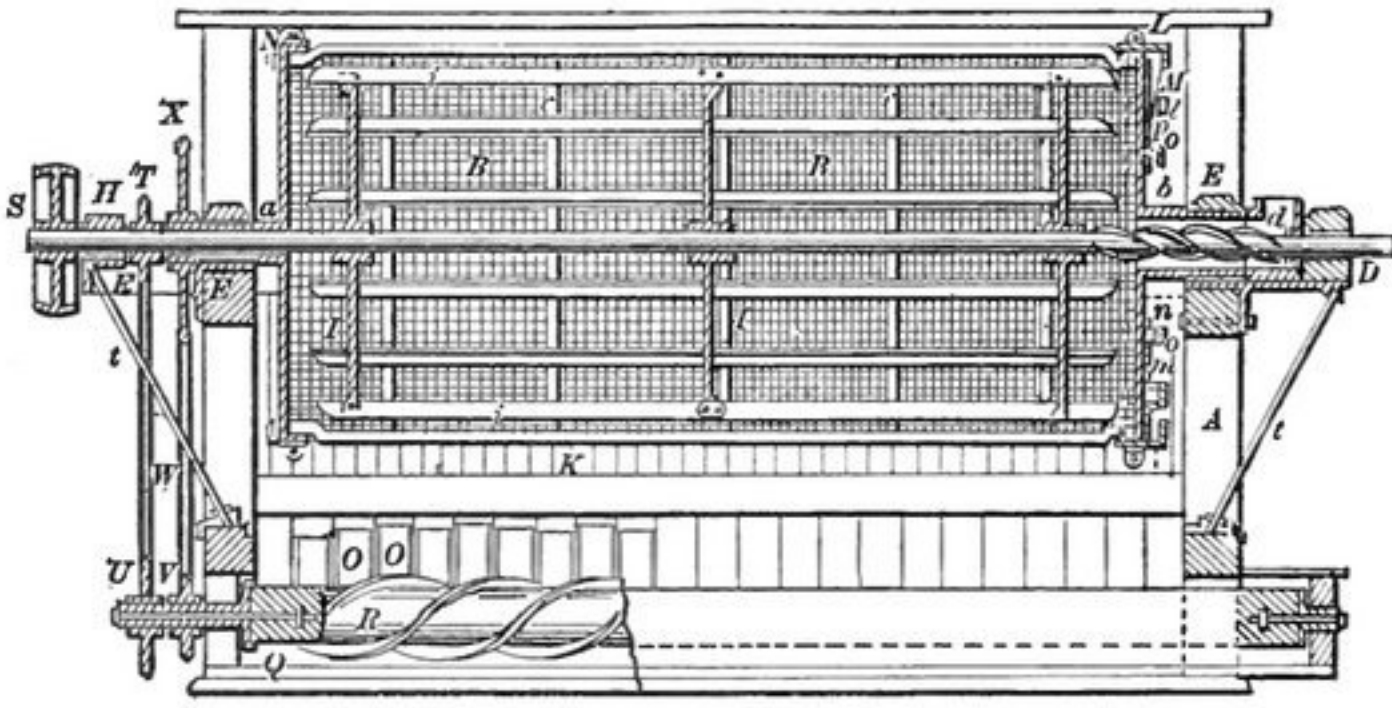
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GENERAL AGENT FOR STEVENS ROLLS AND GENERAL MILL MACHINERY.
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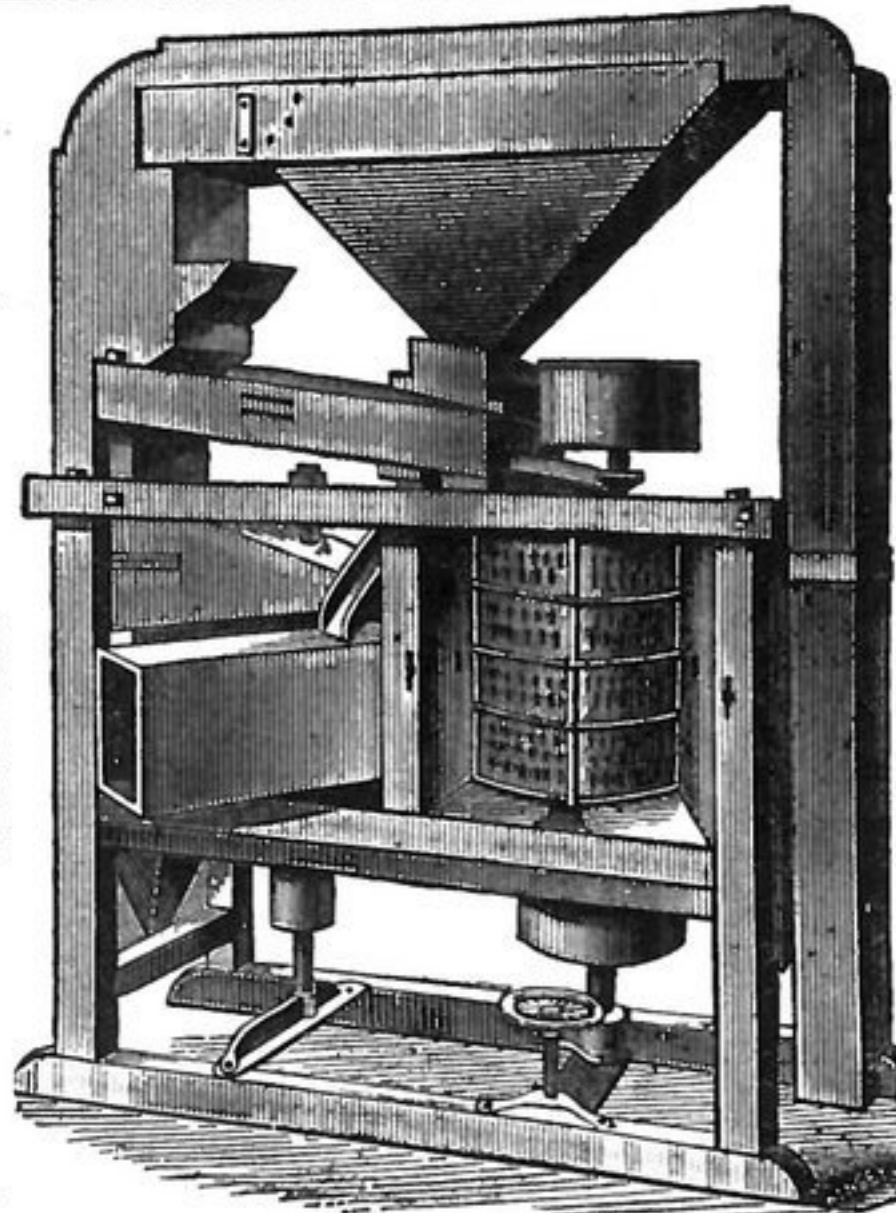
TRIMMER'S Improved Adjustable GRAIN RUBBING, POLISHING - AND - SEPARATING MACHINE COMBINED.

It will clean, rub and separate wheat, and take out the rat balls, black steek seeds, joints of straws, cockle and other impurities. It will also rub off more fuzzy ends and dust from the creases of the berries, by rubbing the wheat together as it passes up between the rubbers, so each berry must get rubbed, scoured and polished alike. It will do all of this work better and last longer than any other machine of the kind. All this we guarantee. It will also clean barley and rye.

Send for Description and Price List.

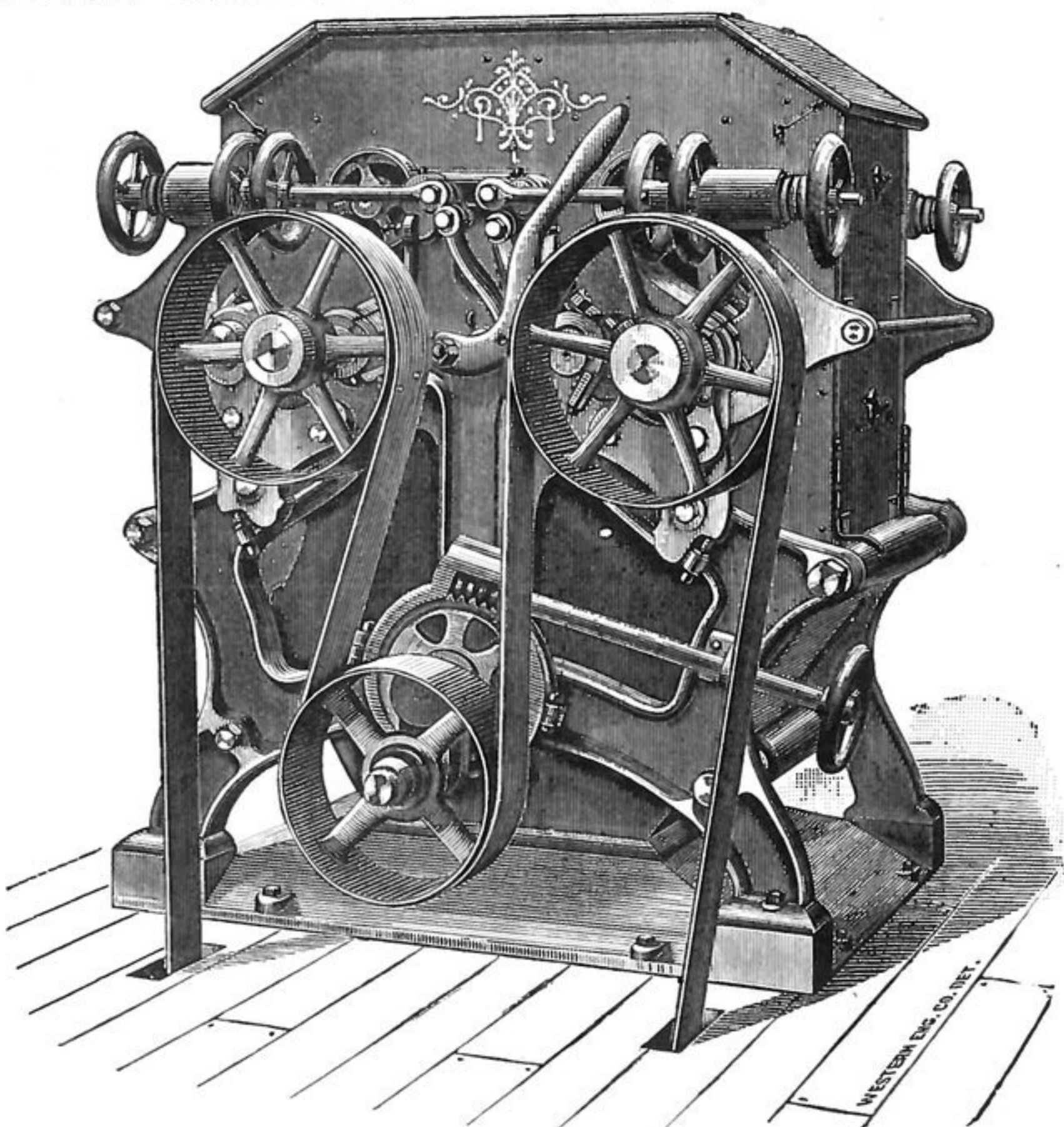
Kreider, Campbell & Co.

Millwrights and Machinists,
1030 Germantown Ave., PHILADELPHIA, PA.



The MILLER ROLLER MILL

Has no superior. Universal Tightener, Automatic Feed, Tight Base, Noiseless, with Non-Cutting



Corrugations. We also manufacture the Rider Wheat Break, which has no equal for 1st, 2d and 3d Breaks. Send for Reference and Circulars of our Machines.

THE MILLER CO., CANTON, O.

PATENT MILLSTONE CEMENT

Invaluable to Millers for Repairs
ties and Seams in French

This is a new article of manufacture, and is common use by millers. It is much cheaper, son. It is perfectly harmless, containing nature and attains the hardness of French only fills the cavity, but adheres to and be-grinding. Good Millstones are now in use, composed entirely of



ing and Filling the Joints, Cavi-Burr and other Millstones.

greatly superior to the preparations now in and can be applied by an inexperienced per- nothing of a poisonous nature. It has the Burr Stone, wears evenly with it, and not comes a part of the Stone, and assists in this preparation. The

LEADING MAKERS ARE ADOPTING IT TO BUILD THEIR MILLSTONES.

For miller's use, it is put up in cases of about 50 lbs. Price per case, \$5.00.

We cannot open an account for so small a sum, therefore Cash should be sent with order otherwise we shall send C. O. D. by Express, collecting for return of the money.

For manufacturers, we furnish in bbls. of 300 lbs. Price upon application.

Emery Rub Stones, for hand use in Finishing the Furrows and Faces of Millstones.

Union Stone Co., 38 & 40 Hawley Street, **Boston, Mass.**

Union Emery Wheels, Emery Wheel Machinery and Tools a Specialty. Wooden Pol-
ishing Wheels, Grinders' and Polishers' Supplies. Catalogue on Application.

EMERY, QUARTZ, CORUNDUM.



CORN & COB CRUSHERS

PRICE, \$15.00.

Send For Circular.
SHAFTING, PULLEYS & HANGERS.

Pulleys a Specialty, Large or Small. Address,

T. B. WOOD & SONS, CHAMBERSBURG, PA.



Toledo Mill Picks and Stone Tool Mfg. Co.

Manufacturer and Dresser of

Mill Picks.

Made of the very best double-refined English cast steel. All work guaranteed. For terms and warranty, address **GEO. W. HEARTLEY, No. 297 St. Clair Street, Toledo, O.** Send for Circular.

N. B.—All Mill Picks ground and ready for use (both old and new) before leaving the shop. No time and money lost grinding rough and newly dressed Picks. All come to hand ready for use.

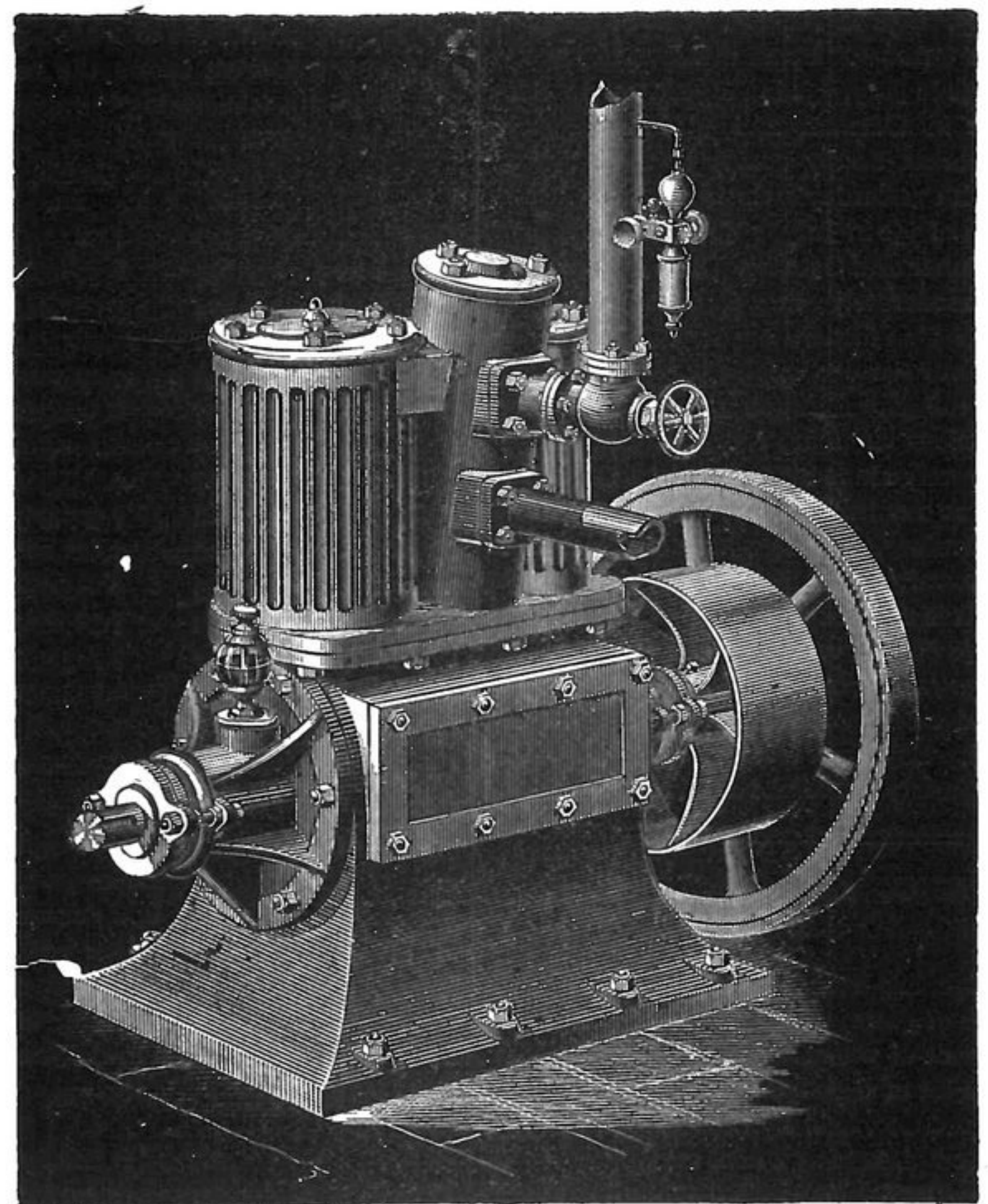
ALSO MANUFACTURERS OF
SHAFTING, PULLEYS, HANGERS COUPLING
AND MACHINE JOBBING.

The Westinghouse Automatic Engine

REAR VIEW, WITH ONE FLY WHEEL REMOVED.

Over 600 Engines Now in Use.

Average Sales, 1600 H. P. Per Month.



The Westinghouse Automatic Engine has no equal in Sensitivity and Close Regulation, Low Cost of Maintenance, and General Convenience, and in all other essential features of a First-Class Engine it is guaranteed to have no Superior. Occupies the Least Space, and saves Half the Cost of Foundations. All Sizes Built Strictly to Gauge, and Parts Interchangeable. Every Engine Tested to Full Power Before Leaving the Shop.

Our Engines are largely used in Burr and Roller Mills, both as the Sole Power, and as a Relay to Deficient Water Power. Especially Adapted to Coupling Direct to the Jack-Shafts, or to Special Machinery.

Send for Illustrated Circular and Reference List, and State the Horse Power Required.

OUR PRICES ARE MODERATE.

THE WESTINGHOUSE MACHINE CO

PITTSBURGH, PA.

Address if More Convenient } 94 Liberty Street, New York.
our Following Branch Offices: } 14 S. Canal Street, Chicago.
401 Elm Street, Dallas, Texas.

HAS BEEN AWARDED
FIRST AND ONLY PREMIUM
AT THE
Millers' International Exhibition.



Office of THE MILLING WORLD.

Buffalo, N. Y., July 2, 1884.

Lively times in breadstuffs, says the N. Y. *Commercial Bulletin* of this morning. The fact that yesterday was delivery day here and at the West has helped to make it so. The principal feature has been the continued heavy selling out by the longs and the putting out of new lines of short grain, which is another way of saying that prices are directly lower. There has been no little selling forced through expiration of bull margins by parties whose faith in the market was more than their money in the bank. Most of the buying has been done by conservative shorts. There have been, however, quite a good many of the unloaded contracts picked up by parties who are trimming for a reaction, despite the fine weather and the big crop expectations and the big returns reported on the harvesting already accomplished. It will take a good while for the new grain, they say, to get on the market in sufficient quantity to have any direct effect, while in the meantime a disturbance to the dreams of overflowing grainaries would find the statistics very strong and values very low. "It is a bet anyhow, and after the great decline we will chance it a little on the long side." Speculative trading has had the old-time ring to it to-day from the opening of the session until the close. The lightning calculators at Chicago figure out a decrease in the visible supply of grain in the United States and Canada of 1,000,000 bushels wheat and of 760,000 bushels corn. The exporters are not doing much; ocean tonnage is not available. It came out on the "ticker" early this morning that the California crop would amount to 2,240,000 tons, which, figured 33 bushels to the ton, would make the California yield amount to nearly 74,000,000 bushels—a production that, according to popular opinion, is an impossibility. The report, however, served very well as a bear argument, and furnished an important item of weakness. The deliveries on contract amount to 200,000 bushels, and at this figure are called light.

The market for options opened off $\frac{1}{2}$ ¢@ $\frac{5}{8}$ ¢, and further declined until the gap between last night's figures and to-day's lowest figures was $\frac{2}{3}$ ¢ in July, $\frac{2}{3}$ ¢ in August, 2¢ in September, and $\frac{1}{4}$ ¢ in October. From this level there was a rally of $\frac{1}{8}$ ¢ in July, $\frac{3}{4}$ ¢ in August, 1¢ in September, $\frac{3}{4}$ ¢ in October, and $\frac{1}{4}$ ¢ in November, with the market finally steady in tone, and as compared with yesterday's closing figures, showing a decline of $\frac{1}{2}$ ¢ in July, $\frac{1}{2}$ ¢ in August, and 1¢ in September and October. The cash market has been moderately active, at a decline of $\frac{1}{2}$ ¢@ $\frac{3}{4}$ ¢, closing firmer.

With the further decline in the price of wheat to confirm the late attitude of procrastination taken by buyers of flour, the flour market has been left severely alone by such of the buyers as were able to further delay purchasing. The business therefore, has been moderate. Prices nominally lower, say 5¢@10¢; there is so little doing, that it is difficult to express the decline in figures. Rye flour is very firm, but quiet for the want of stock. Corn goods are in moderate demand, and weak, because corn is lower; values are nominal. Bag meal is dull and heavy. Mill feed is moderately active and weak.

BUFFALO WHEAT MARKET.

Buffalo, July 1st, 1884.

Our market has been very dull the past week for all kinds of grain. The only sales made were a few car loads of wheat and corn for the interior trade. One lot of 6500 bus. milling white sold to speculator at \$1.00, held by car loads at 1.01½¢@1.02. No. 2 red, held at \$1.00, sales made at 98¢@98½¢ by car loads, No. 1 hard Duluth sold this morning at \$1.00½¢ for boat load, car lots held at \$1.01, No. 2 hard held at 96¢, and No. 1 regular at 95½¢. The demand for Duluth wheat for export is increasing, 125,000 bus. were shipped to New York and Boston the past week.

Corn took a turn down last week in Chicago about five cents, which has made our market decidedly flat, large lots that have arrived here by rail have been ordered into elevator to await better prices. No. 2 held at 58¢, No. 3 at 54¢@55¢, sam-

ple 50¢@53¢. Oats nothing doing, mixed western held at 34¢@35, No. 2 white 36¢@37.
JAMES S. MCGOWAN & SON.

BUFFALO MARKETS.

FLOUR—City ground clear Duluth spring \$5.25@5.75; straight Duluth spring, \$5.75@6.00; amber, \$5.75@5.85; white winter, \$5.50@5.75; new process, \$6.75@7.00; Graham flour, \$5.00@5.25. Western straight Minnesota bakers, \$5.75@6.00; clear do, \$5.25@5.75; white winter, \$5.75@6.00; new process, \$6.75@7.25; low grade flour, \$2.50@4.00. CORNMEAL—Market steady, with a fair demand. Coarse, \$1.20; fine, \$1.30 per cwt. RYE FLOUR—In fair demand at \$3.75@4.25. OATMEAL—Ingersoll, \$5.75; Bannerman's granulated, \$6.00; Schumacher's Akron, \$6.25 per bbl. BUCKWHEAT FLOUR—Demand fair at 3.50 per cwt. WHEAT—Dull. At the Call Board sales were 10,000 bu. No. 1 hard Northern Pacific at \$1.01 July, and 5,000 bu. do at \$1.01 October; \$1.02 asked cash, \$1.00½ asked, \$1.00 bid year, \$1.03 asked, \$1.02 bid August, \$1.02 bid September, \$1.02 asked \$1.00½ bid October. Milling white offered \$1.03, and red \$1.00. CORN—Dull. Sales four car-loads new mixed at 56¢, and three do. No. 3 at 55¢@56¢ on track. No. 2 offered at 57¢; 57¢ asked 55¢ bid July, 58¢ asked 57½¢ bid August, 58½¢ asked, 58¢ bid October. Sale 5,000 bu. No. 2 at 57½¢ September, and 5,000 bu. do. at 57½¢. OATS—Dull. Mixed Western offered at 34½¢@35¢, and No. 2 white at 37¢. BARLEY—No. 1 Canadian 88¢@90¢, No. 2 do 80¢@83¢, No. 3 do 70¢@75¢, six-rowed State 75¢@78¢. RYE—No. 1 Western nominal at 72¢.

FOREIGN EXCHANGE.

Exceedingly quiet, the advance of Tuesday having checked transactions. Bills are in moderate supply and rates generally steady. The posted rates closed at 4.38 for 60 days and 4.85 for demand. The actual rates ranged: At 60 days' sight, 4.81¼¢@4.82¼¢; demand, 4.83¼¢@4.84¼¢; cables, 4.84½¢@4.85¢, and commercial, 4.80¼¢@4.80½¢. Continental exchange firm and fairly active; francs, 5.23½¢@5.22½¢ and 5.20½¢@5.20; reichmarks, 94½¢@94½¢ and 94½¢@94½¢; guilders, 39¼¢@39½¢ and 40¢@40½¢.

The closing posted rates were:

	60 days.	30 days.
London	4 83	4 85
Paris francs	5 19½	5 16½
Geneva	5 18½	5 16½
Berlin, reichmarks	95	95½
Amsterdam, guilders	40½	40½

BUFFALO COMMERCE.

The receipts of flour and grain by lake at this port during the month of June show a large falling off as compared with the movement in 1883. In flour there is a decrease of 28,907 barrels, in wheat an increase of 385,692 bushels, in corn a decrease of 3,221,222 bushels, in oats a decrease of 418,038 bushels, and in rye a decrease of 151,398 bushels. The total decrease in all kinds of grain for the month is 3,404,966 bushels, and in all grain, flour reduced to wheat, 3,547,501 bushels. The following shows the receipts of flour and grain by lake during the month of June in the years named:

	Flour, bbls.	Grain, bu.	Grain, incl'g flour, bu.
1884	2,223,737	4,983,143	6,101,828
1883	252,644	8,388,109	9,651,329
1882	163,674	5,083,443	5,901,813
1881	208,912	10,965,499	12,020,059
1880	147,441	17,227,106	17,964,311
1879	104,487	6,344,340	6,366,775
1878	104,997	8,399,593	8,924,478
1877	94,654	4,896,302	5,369,613
1876	195,722	7,905,907	8,434,517
1875	201,416	7,520,228	8,527,308
1874	212,753	9,215,798	10,279,503
1873	183,769	7,319,513	8,238,358
1872	125,800	7,783,059	8,412,059
1871	199,369	6,943,330	9,940,130
1870	109,390	4,096,847	5,058,597
1869	237,455	6,879,305	8,065,935
1868	128,616	4,730,510	3,273,590

Up to the first of July the receipts of flour show an increase of 105,464 barrels, while in the total receipts of grain there is a decrease of 6,869,084 bushels, and all grain, flour reduced to wheat, 7,354,759 bushels. The following shows the receipts by lake since the opening of navigation to and including June 30th in the years named:

	Flour, bbls.	Grain, bu.	Grain, incl'g flour, bu.
1884	358,108	11,628,696	13,419,236
1883	455,241	18,497,780	20,733,995
1882	402,423	15,843,902	17,504,017
1881	285,985	18,438,588	19,868,513
1880	304,005	37,750,007	39,279,350
1879	185,160	14,285,615	15,211,415
1878	283,640	24,350,163	25,768,363
1877	173,080	11,124,007	11,980,452
1876	168,348	14,417,928	15,259,943
1875	270,181	1,829,265	13,179,855
1874	412,489	18,250,617	20,512,964
1873	334,597	15,591,685	17,249,670

1872 . . . 228,196 13,936,524 15,137,504

1871 . . . 477,717	16,227,923	18,646,508
1870 . . . 405,657	8,841,855	10,869,641
1869 . . . 475,264	11,194,708	13,571,028
1868 . . . 355,330	10,190,090	11,906,740
1867 . . . 110,122	3,204,126	3,754,736

RAILROAD SHIPMENTS.

The following shows the shipments from elevators by rail, of grain received by lake for the month of June, and from the 1st of January in the years indicated:

	1884.	1883.	1882.	1881.
Wheat, bu.	233,954	275,647	534,228	888,213
Corn, " "	1,272,209	1,014,988	844,903	2,670,220
Oats, " "	32,797	12,645	632,602	
Barley, bu.				6,000
Rye, " "			7,990	

Total, bu. 1,506,163 1,322,432 1,999,766 4,197,035

FROM JANUARY 1ST TO JUNE 30TH.

	1884.	1883.	1882.	1881.
Wheat, bu.	1,198,343	1,258,167	1,354,633	2,673,956
Corn, " "	1,565,298	2,779,011	2,143,209	3,423,570
Oats, " "	1,900	41,470	71,999	675,402
Barley, " "	34,374	62,328	91,588	17,321
Rye, " "		500	8,690	

Total, bu. 2,800,015 4,141,476 3,670,119 6,790,249

CANAL EXPORTS.

The following exhibit shows the amount of flour and grain shipped from Buffalo by canal from the opening of navigation to June 30th for the last four years:

	1884.	1883.	1882.	1881.
Canal opened, May 7.	May 7.	April 11.	May 17.	
Flour bbls . . .	1,183	1,202	2,273	69

Wheat, bu.	3,941,393	4,222,962	3,493,989	5,071,879
Corn, bu.	2,441,718	6,274,982	5,126,068	3,743,264
Oats, bu.	1,032,384	1,290,472	103,738	127,250
Barley, bu* . . .	61,207	106,309	116,816	133,966
Rye, bu.	631,995	596,160	278,096	

Total, bu. 8,108,697 12,490,885 9,128,907 9,076,359
*Barley malt.

NO. OF BOATS CLEARED SINCE OPENING.

1884	1,346	1879	1,695
1883	1,925	1878	2,906
1882	2,057	1877	1,394
1881	1,710	1876	1,480
1880	3,418	1875	1,346

NOTES.

Wolf & Hamaker, Allentown, Pa., have ordered from E. P. Allis & Co., Milwaukee, Wis., twelve pairs of Allis rolls, in Gray's noiseless belt frames, for E. Strickles & Bro., Lebanon, Pa.

The Franklin Warehouse and Elevator Co., of Franklin, Tenn., are erecting a large wheat elevator upon plans furnished by the Richmond City Mill Works, of Richmond, Ind., who also furnish the necessary machinery.

FIRST AND ONLY PREMIUM
OVER ALL COMPETITORS!
PURCHASE ONLY
FROM RELIABLE DEALERS.

The Union Mill Co., of Atchison, Kan., has ordered two pairs of rolls, and one No. 1 single purifier, all to have patent automatic feed, from the Case Mfg. Co., Columbus, O. The same to be shipped to Trowbridge Bros. Wymore, Neb.

Chas. Arnold, of Sterling, Kansas, is building a large elevator in connection with the new roller mill now being completed for C. Arnold & Co. The Richmond City Mill Works, of Richmond, Ind., furnish all the machinery for both mill and elevator.

Landes, Beall & Co., of Arkansas City, Kan., have one of the best mills in the state. They recently concluded to adopt the full roller system and have requested the Richmond City Mill Works, of Richmond, Indiana, to furnish the rolls and connecting machinery necessary to take the place of burrs heretofore used. The mill is to have a capacity of 250 barrels per day.

A fire a few weeks ago destroyed the mill of C. Theis & Son, Columbus, O. The mill was remodeled about two years ago, when a full line of rolls, etc., were furnished by the Case Mfg. Co., Columbus, O. The mill was in successful and profitable operation up to the time it was destroyed. The firm have decided to rebuild the mill, and as the machinery they were operating had given them good satisfaction, they have placed their order with the same firm for a complete outfit of breaks, rolls, purifiers, centrifugals, reels, scalpers, bolting chest, &c., for a gradual reduction mill on the "Case" system. As this is the second order for a full mill that these parties have placed with the Case Mfg. Co., it is evident that their machinery is giving good satisfaction.

JAMES S. MCGOWAN & SON,
SHIPPING AND COMMISSION MERCHANTS.

Choice Milling Wheats a Specialty
Room 60 Board of Trade Building.
BUFFALO, N. Y.

No Charge for Inspection.

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EUREKA COIL SPRING
Warranted to Prevent Backlash. Over 1,000 in use. Equilibrium Driving Pulley Prevents Side Pull on Mill Spindle.
JOHN A. HAFNER,
PITTSBURGH, PENN.

FLOUR MILLS BUILT
OR REMODELED ON ANY SYSTEM.
Roller, Stone, or Mixed
PLANS AND ESTIMATES
Furnished Promptly.
CORRESPOND WITH US
FOR
ANYTHING NEEDED IN A MILL
IT WILL PAY YOU.
FAIR PRICES FOR
Excellent Machinery

1844 THE SIMPSON & GAULT MFG. CO. 1884
MANUFACTURERS, CINCINNATI, OHIO.

IRON WORK OF ALL KINDS
Designed For
STYLE AND STRENGTH.
PATENT MILL IRONS
UNEQUALLED.
Write For Estimates.
DUFOR'S GENUINE
BOLTING CLOTH.
WE HANDLE NO OTHER.
Cheap Cloths are often sold by
Dealers for this
POPULAR BRAND.

NORDYKE & MARMON CO., INDIANAPOLIS, IND.

Builders from the Raw Material of

ROLLER MILLS, CENTRIFUGAL REELS, FLOUR BOLTS.

WE ARE THE SOLE OWNERS FOR THE UNITED STATES OF ALL THE PATENTS UPON THIS ROLLER MILL.

This Is the Only Roller Mill Made Having All the Essentials Needed In Successful Milling.

500 BARREL MILL IN MISSOURI.

Read what an Old Miller who has Thirty-Four Pairs of these Rolls in Constant Use, Says:

MESSRS. NORDYKE & MARMON CO., INDIANAPOLIS, IND.

Gentlemen: In regard to the workings of our new mill erected by you, will say it is working fully up to and beyond our expectations. Our average work is fully 33 per cent. over your guarantee. Since starting our mill last July we have had no complaint of our flour from any market where sold. It gives universal satisfaction, and we have it scattered on the trade from Chicago to Galveston, Texas. Our yields are all that are attainable. We have tested it on both Spring and Winter wheats with satisfactory results on both varieties. Since the mill was turned over to us we have not changed a spout or a foot of cloth, nor have we found it required to make any changes. We have run as long as six days and nights without shutting steam off the engine, not having a "choke" or a belt to come off. The mill is entirely satisfactory to us, and for a fine job of workmanship, milling skill and perfection of system, we doubt if it is surpassed in the United States to-day. It is certainly a grand monument to the ability and skill of Col. C. A. Winn, your Milling Engineer and Designer. You may point to this mill with pride and say to competitors, "You may try to equal, but you will never beat it." Wishing you the success that honorable dealing deserves, I am,

OFFICE OF DAVIS & FAUCETT MILLING CO.,
ST. JOSEPH, MO., Nov. 28th, 1883.

Yours, etc.,
R. H. FAUCETT, PRES.

500 BARREL MILL IN ILLINOIS.

MESSRS. NORDYKE & MARMON CO., INDIANAPOLIS, IND.

Gents: We started up our mill in June last year, and it gives us pleasure to say that your Roller Mills are doing splendid work and give us no trouble. Your milling program required no changes, and concerning yields, we get all the flour from the offals, and we sell our best grades in the principal markets of the United States at the highest prices offered for any flour. All the machinery made by you is first-class, and we would not know where to purchase as good.

OFFICE OF DAVID SUPPGER & CO.,
HIGHLAND, ILL., Jan. 10, 1884.

Yours respectfully,
DAVID SUPPGER & CO.

125 BARREL MILL IN INDIANA.

NORDYKE & MARMON CO., INDIANAPOLIS, IND.

Gentlemen: The 125 barrel All Roller mill you built us has been running all summer, and does its work perfectly. Before contracting with you for this machinery we visited many Roller Mills throughout the West and Northwest, built by the different leading mill-furnishers, and from all we could see, those built by you seemed to be giving the best satisfaction, and this is why we bought our machinery of you. Our mill comes fully up to your guarantees, and the capacity runs over your guarantees. The bran and offal is practically free from flour, and our patent and bakers' flour compares favorably with any we have seen elsewhere. I don't think anyone can beat us. Your Roller Machines are the best we have seen; they run cool, and the interior does not sweat, and cause doughing of the flour. Judging from our success, we would recommend other millers to place their orders with you.

LAPEL, MADISON COUNTY, IND., Jan. 10, 1884.

Yours truly,
J. T. FORD.

Letters on file in our office from a large number of small roller millers giving as favorable reports as above. A portion will be published as occasion demands.

SPECIAL MILLING DEPARTMENT!

Mill Builders & Contractors--Guarantee Results

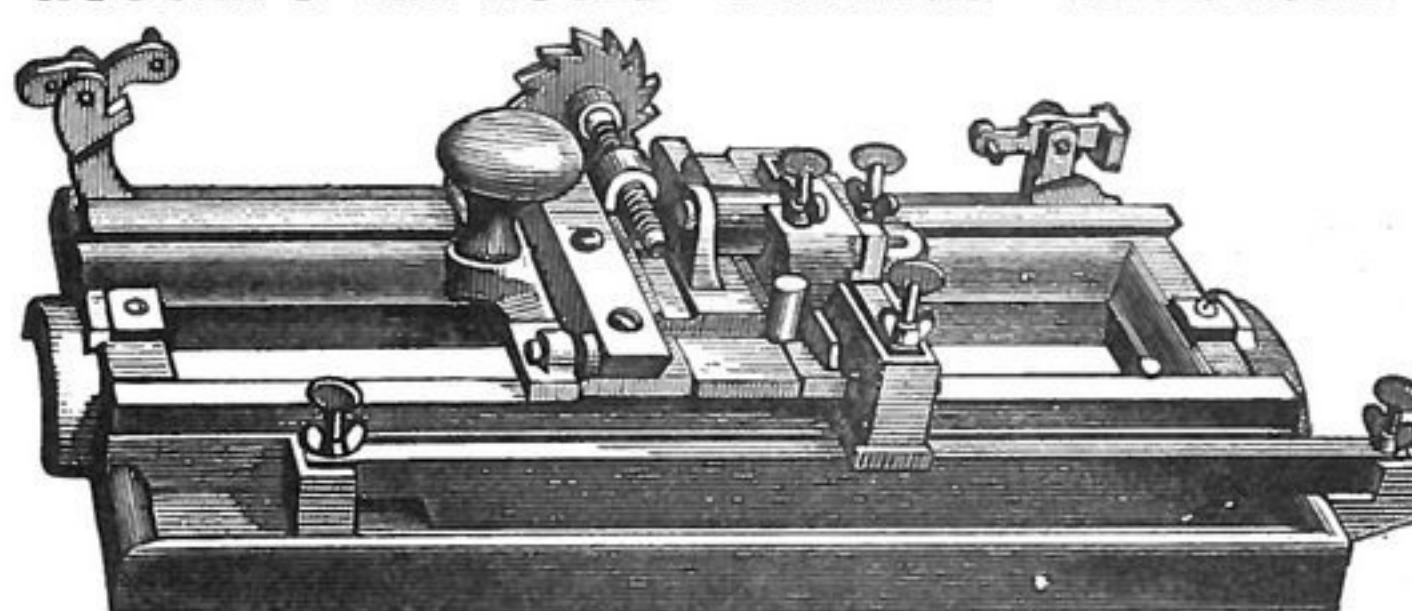
Motive Power and Entire Equipment of a Modern Mill Furnished under one Contract.

HOOVER'S IMPROVED DIAMOND MILLSTONE DRESSING MACHINE.

ADAPTED TO ALL KINDS OF DRESSING.

No 1, to face and crack \$25.00
No 2, to face, crack, dress furrows, and will dress any size stone 45.00
No 3, to face, crack and dress furrows..... 40.00

Will do as good work, and is more easily adjusted than any other machine. Sent on 30 days' trial. Address for circulars, containing full information.



C. S. HOOVER, Patentee and Manufacturer, 409 East King St., LANCASTER, PENN.

THE BEST AND CHEAPEST COB CRUSHER

IN THE WORLD.

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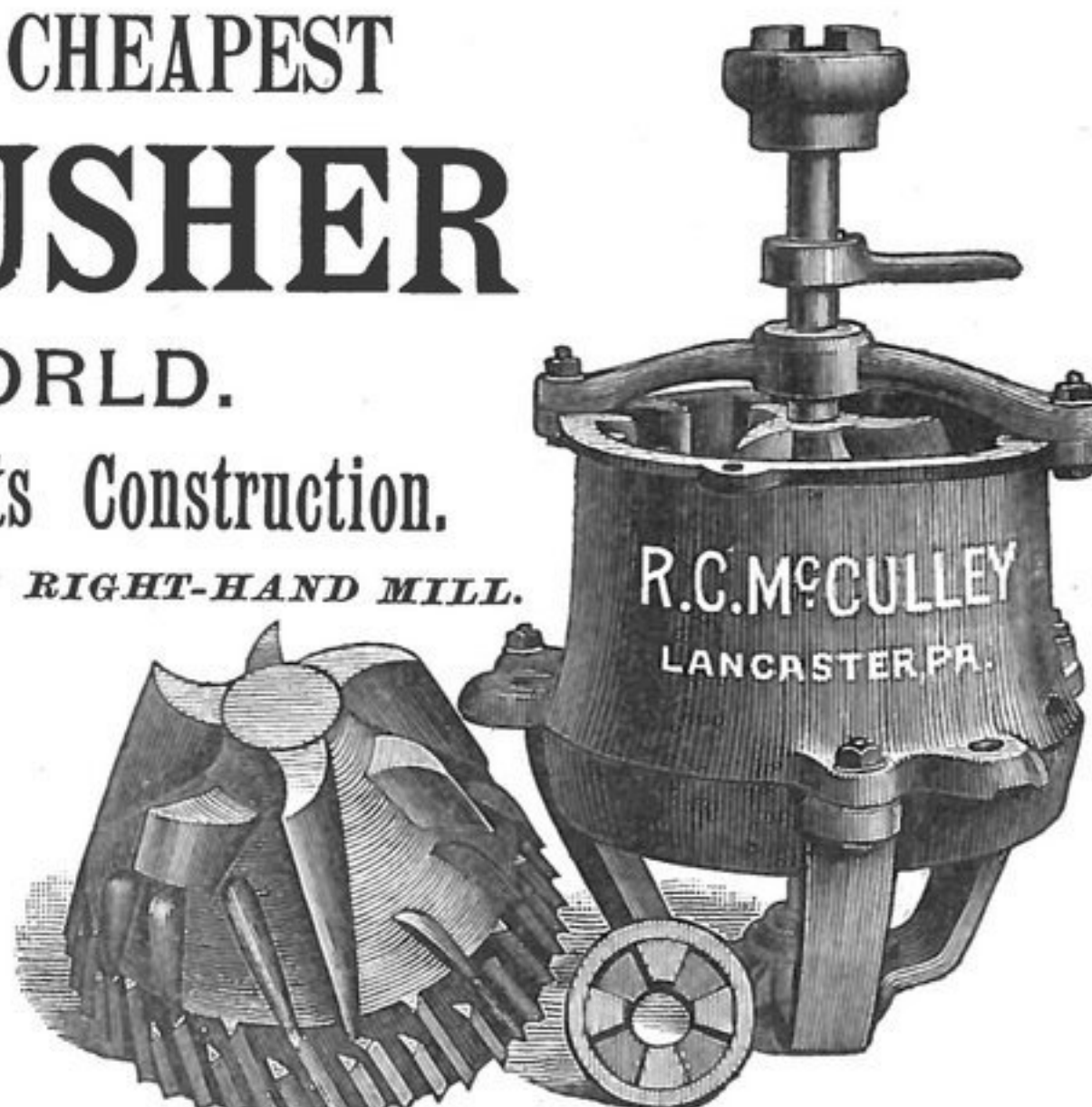
PRICE, 30.00.

CAPACITY 75 BUSH. PER HOUR.

Thousands of these Crushers are now in use, and giving entire satisfaction.

Please Send for Circulars.

R. C. McCULLEY, LANCASTER, PENN.



C. N. SMITH'S CENTRIFUGAL REEL

IS BEYOND QUESTION THE

BEST IN THE MARKET

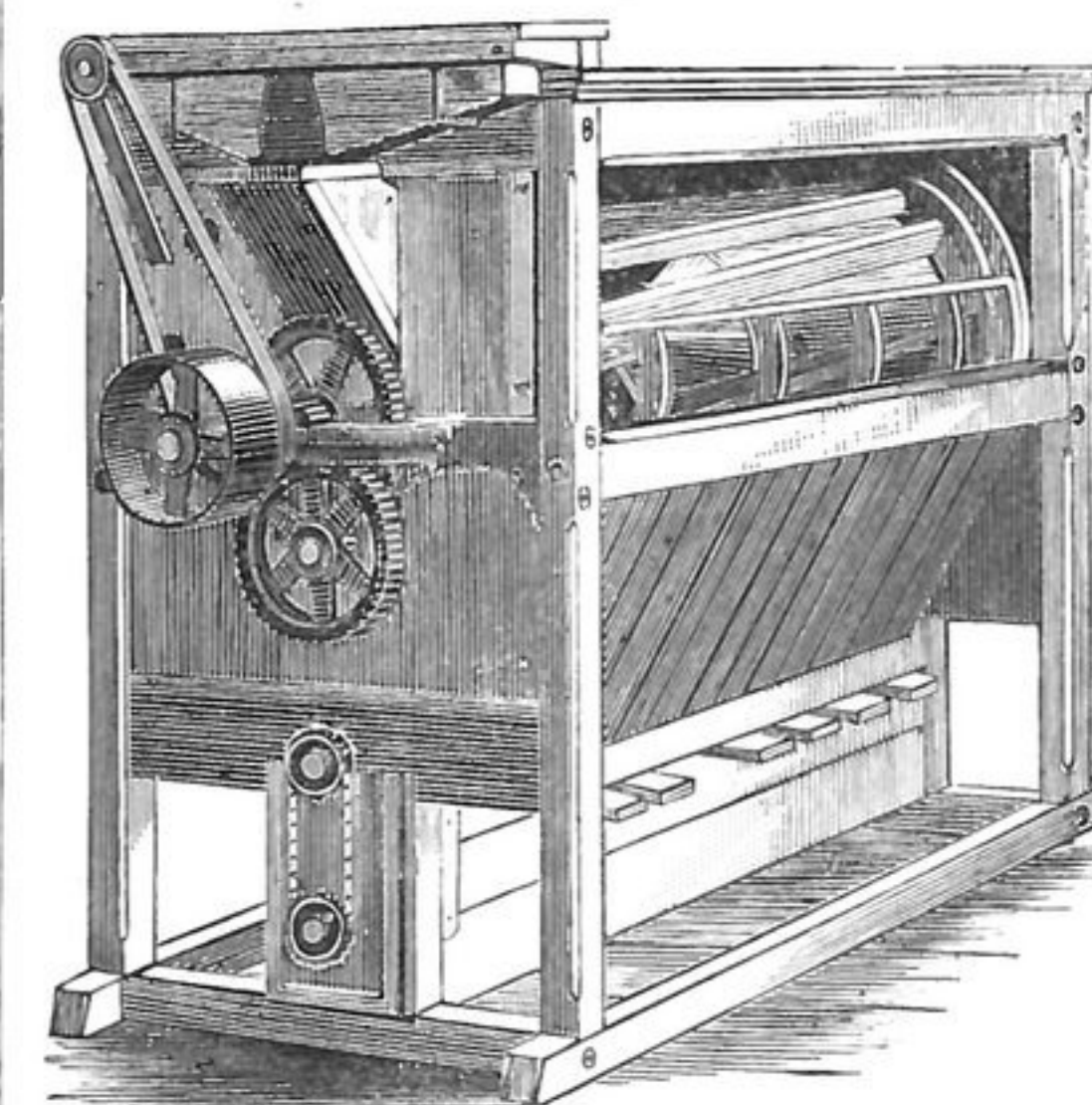
AND IS SOLD FOR

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While the operation of every Machine is

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Send for Prices, Lists of Testimonials, and Descriptive Catalogue.



READ THIS LETTER. THEY WILL DO AS WELL FOR YOU.

MR. C. N. SMITH.

We have been running the two Centrifugals since February, the first without any stop whatever, and are well pleased with them. We throw less stock on our Rolls, and make four to five per cent. less Low Grade than before we had the Machine. You can refer any one to us and we will be pleased to give it a good send off. Wishing you success, we remain,

CHAS. SHUEY, Head Miller.

OFFICE OF LUDLOW MILLS, DAYTON, OHIO, April 23, 1884.

Yours respectfully,
CHAS. S. DURST, Supt.

MANUFACTURED ONLY BY

C. N. SMITH, DAYTON, OHIO

MANUFACTURER OF MILL FURNISHINGS.

KEYSTONE CENTRIFUGAL REEL

—PATENTED MAY 6th, 1884.—

Drag Brush Feed, Tightest Heads, Best Results. Cheapest and Best on the Market. Adapted to all Kinds of Milling. The New Drag Feed Thoroughly Protects the Silk. Sent on Trial to any Responsible Miller.

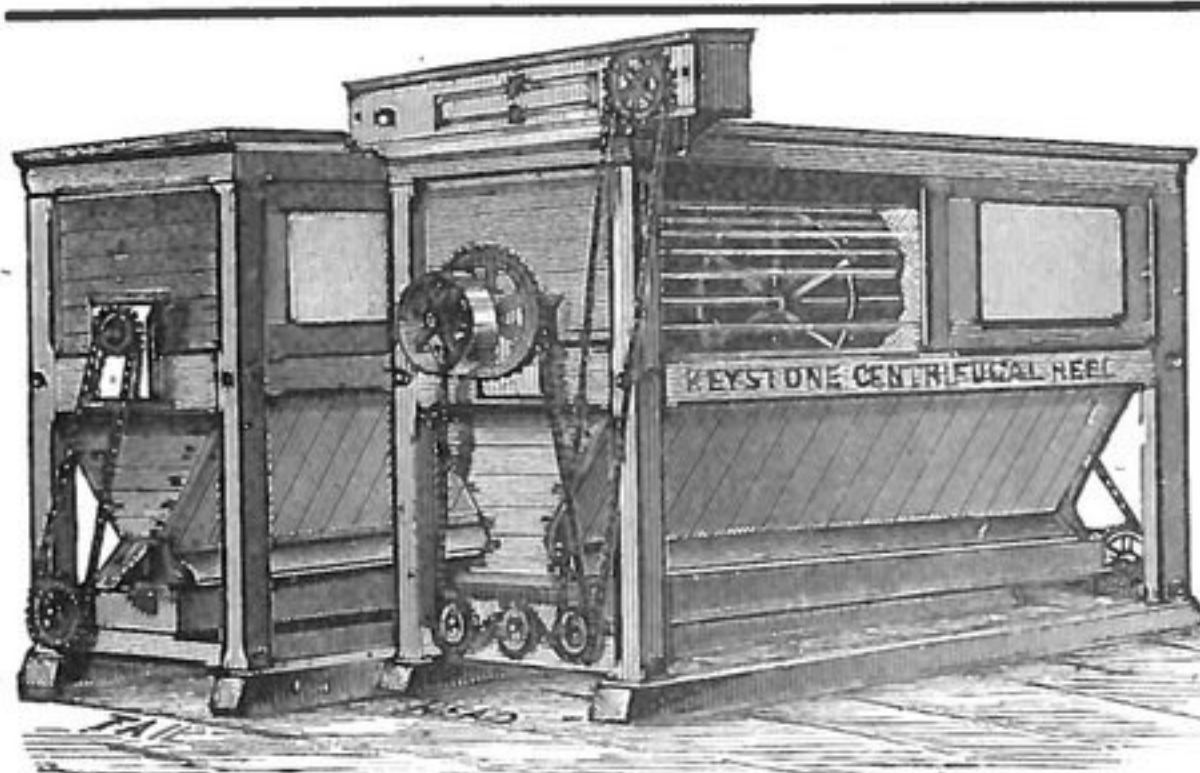
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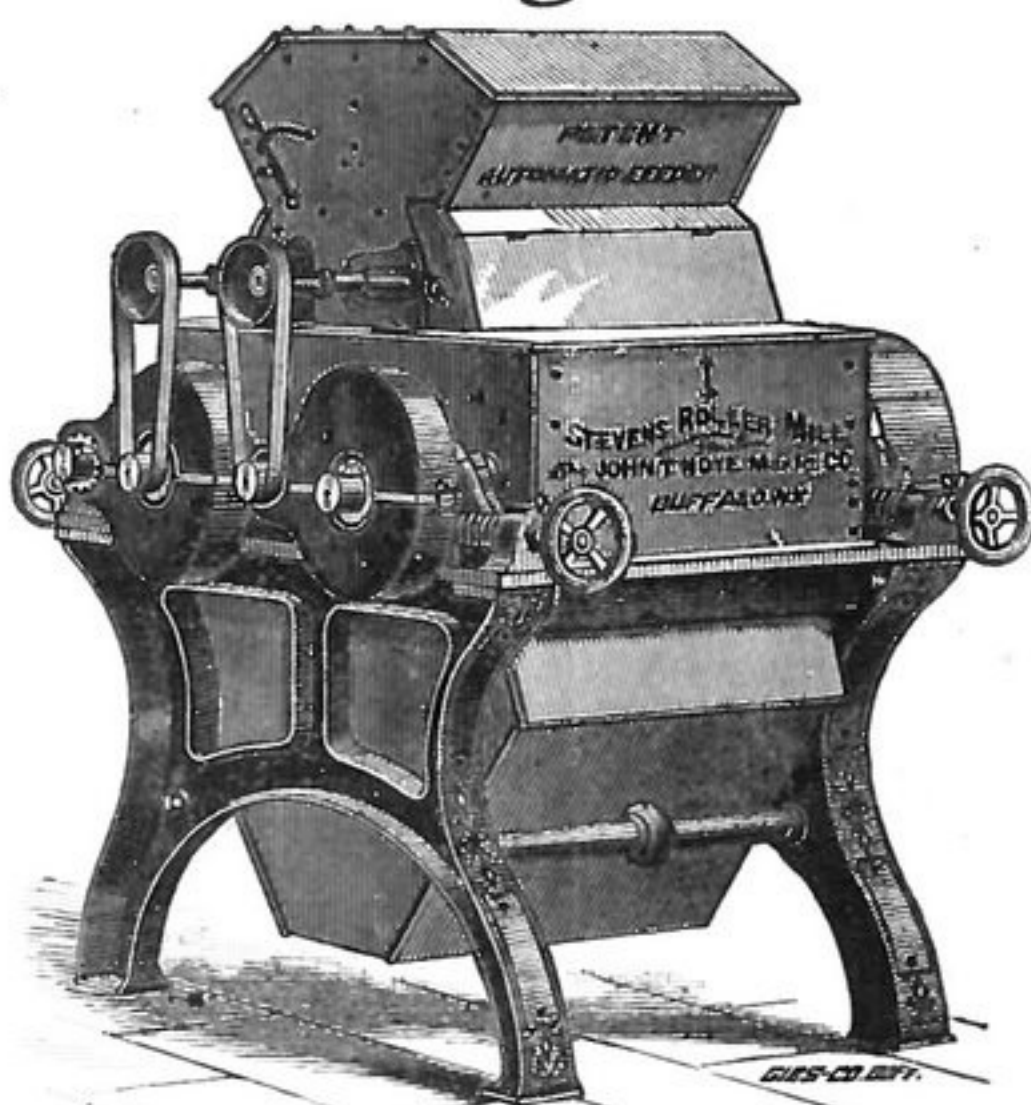
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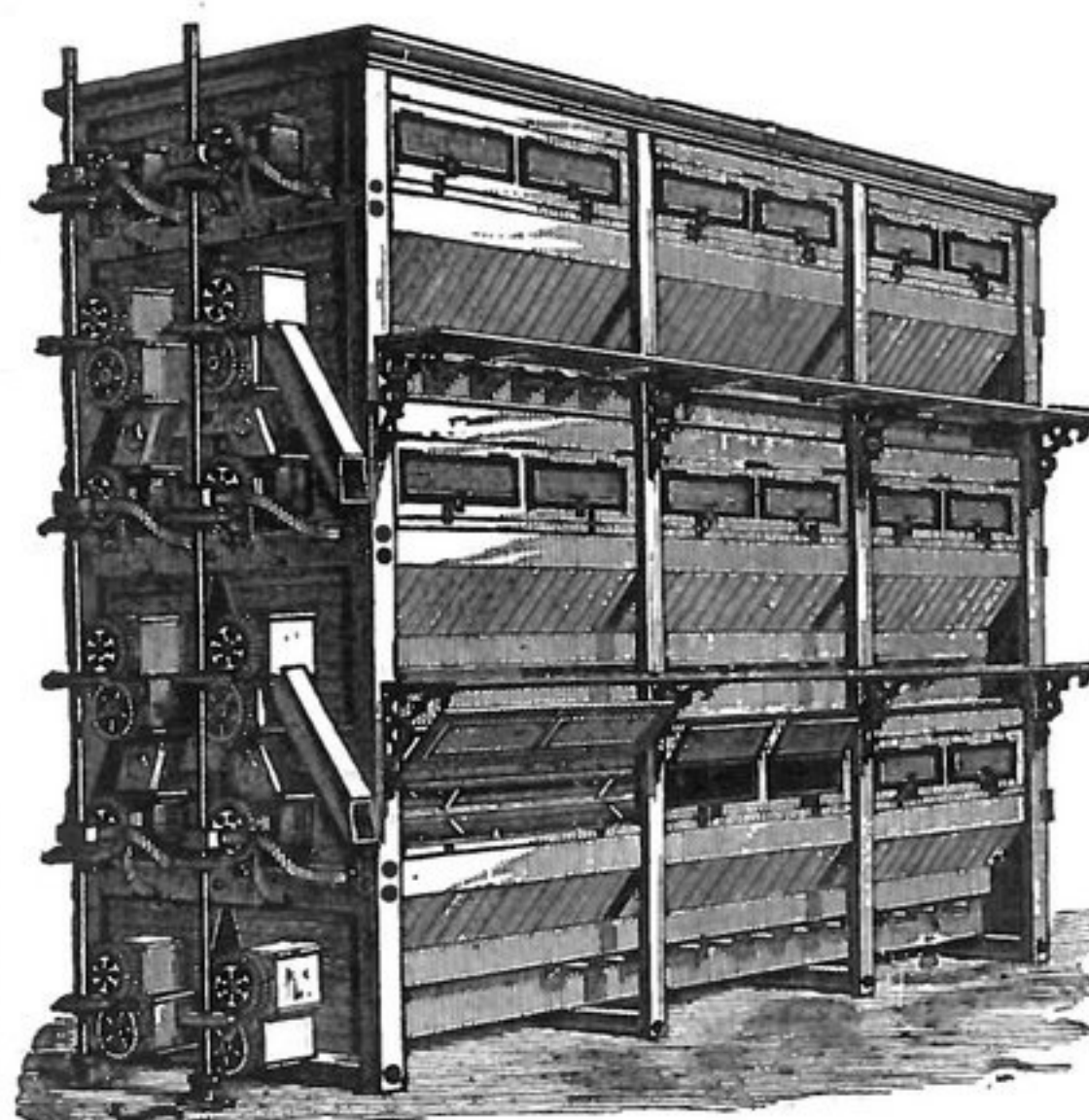
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